Young Adults' Relationship Satisfaction with Parents: The Effects of Overparenting and Relational Maintenance Behaviors Performed Via ICTs

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Abstract

A growing body of scholarship finds that information communication technologies (ICTs) influence parent-young adult child relationships (Gentzler et al., 2011; Ramsey et al., 2013; Schon, 2014). Few studies have examined explanatory mechanisms for this relationship. Based on the Basic Psychological Needs Theory (Ryan & Deci, 2000a) and the Cues-Filtered-In Perspective (Walther & Parks, 2002), this study examined perceptions of parents' relational maintenance and overparenting as potential mediators of this relationship for three ICTs: voice calls, text messages, and Facebook. The results from a survey of 491 overparented young adults suggest that it is perceptions of behaviors performed through ICTs (perceptions of overparenting and parents' relational maintenance) that best predict young adults' relationship satisfaction. These results support other recent findings (e.g., Kelly et al., 2017) that suggest that overparenting has a positive influence in parent-young adult child relationships. These results also reaffirm the importance of relational maintenance for effective relational functioning.

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Chapter One:

Introduction and Rationale

Information communication technologies (ICTs) have become a regular part of our lives; therefore, it is important to understand the effects of their use on both ourselves and on our close relationships. While a plethora of research has examined their use in romantic (Jin & Pena, 2010; Miller-Ott, Kelly, & Duran, 2012) or friendship (Hall & Baym, 2011; Ledbetter et al., 2011; Miczo, Mariani, & Donahue, 2011) relationships, a much more modest amount has examined ICTs in parent-child relationships (Miller-Ott, Kelly, & Duran, 2014). As the child becomes a young adult and leaves the family home, ICTs begin to play an even larger role in maintaining these relationships. The parent-child relationship remains important as the child enters adulthood; young adults still rely on parents for financial and emotional support (Padilla-Walker, Nelson, & Carroll, 2012; Schrodt et al., 2009; Taylor, Funk, Craighill, & Kennedy, 2006). Gentzler, Oberhauser, Westerman, and Nadorff (2011) found that young adults on average speak to their parents a few times a week utilizing voice calls, and Hofer (2008) found young adults communicate with their parents 13 times a week on average, with voice calls and emails being utilized most commonly. Therefore, it is important to understand how and why ICTs influence parent-young adult relationships.

Recent research finds that use of ICTs in close relationships influences relational characteristics such as relationship satisfaction and commitment. Jin and Pena (2010), for example, found that frequency and duration of mobile phone calls positively influenced love and commitment in romantic relationships, and Schwartz (2008) found that frequency of mobile phone interaction increased relationship satisfaction. Ledbetter et al. (2011), in a study of largely friends or acquaintances, found that frequency of communication through the social networking

website Facebook positively predicted perceived closeness with the relational partner. In regard to parent-young adult child relationships, frequency of communication and number of channels utilized to communicate were found to predict communication satisfaction and relationship satisfaction (Schon, 2014). Thus, there is growing evidence that ICT use influences the quality of close relationships. This study will examine relationship satisfaction as a marker of relationship quality. This relational characteristic was chosen because it has been examined in past research on parent-young adult child relationships (e.g., Miller-Ott et al., 2014; Myers & Glover 2007; Punyanunt-Carter, 2008; Schon, 2014) and because it relates more to parent-child relationships than outcomes such as commitment that better apply to voluntary relationships.

Given that a number of studies have found a link between ICT use and relational characteristics, it makes sense to start examining the factors that may explain this link (e.g., Hall & Baym, 2011). One possibility for a mediating variable that explains the association between ICT use and relational characteristics is relational maintenance. Relational maintenance consists of behaviors that help sustain or strengthen a relationship (Stafford, Dainton, & Haas, 2000). Engaging in relational maintenance behaviors face-to-face has been shown to be associated with relational characteristics like commitment, liking, and satisfaction (Stafford & Canary, 1991). Recent research has found that general use of ICTs is associated with use of ICTs for relational maintenance (Brody, Mooney, Westerman, & McDonald, 2009; McEwan, Fletcher, Eden & Sumner, 2014). In turn, these mediated relational maintenance behaviors have been found to influence relational characteristics just as do ones performed face-to-face (Ledbetter & Kuznekoff, 2012; Stewart, Dainton, & Goodboy, 2014). Therefore, this study will examine whether perceptions of parents' relational maintenance behaviors performed through ICTs help explain the association between ICT use and young adults' relationship satisfaction.

ICTs being used to enact overparenting behaviors may be another avenue through which ICT use influences relationship satisfaction for the young adult. Overparenting is a parenting style in which the parent is overly involved in the young adult's life and engages in helping behaviors that are inappropriate to the child's age (Segrin, Woszidlo, Givertz, & Montgomery, 2013). The popular press has assumed that ICTs enable overparenting (Bernstein, 2009; Graves, 2007; Umholtz, 2015) and has provided anecdotal evidence suggesting the idea to be true (ABC News, n.d.; Schwarz, 2015). It has only been very recently that empirical research has been conducted examining this idea; this late-breaking research supports the idea that frequency of communication via ICTs relates to overparenting (Kelly, Duran, Miller-Ott, 2017).

Research by Hofer (2008) also suggests that use of ICTs is associated with overparenting. Overparenting is, in turn, associated with relationship quality. Kelly et al. (2017) found that young adults who reported a high level of overparenting from their father also reported higher average relationship satisfaction and relational closeness than those who reported less overparenting. Conversely, Segrin, Woszidlo, Givertz, Bauer, and Murphy (2012) found that overparenting was associated with more problematic parent-child communication, which would likely decrease relationship satisfaction. Although directionality seems uncertain, it seems reasonable to believe that general ICT use could influence relationship satisfaction for young adults because it promotes overparenting being enacted via ICTs.

One theory that will undergird this research is Basic Psychological Needs Theory (BPNT, Ryan & Deci, 2000a). BPNT (Ryan & Deci, 2000a) posits that adults have three innate psychological needs, those of autonomy, competence, and relatedness, that must be fulfilled for them to live satisfying lives. This study will focus on relatedness needs. Relational maintenance would likely help fulfill a young adult's relatedness needs. The effect of overparenting on

relatedness needs is less clear. The support that is a part of overparenting (Fingerman et al., 2012) likely increases fulfillment of young adults' relatedness needs. Fingerman et al. (2012) found that life satisfaction, which is frequently examined as an outcome of needs fulfillment (e.g., Johnston & Finney, 2010), was positively associated with the "intense support" variable that was utilized to measure overparenting (p. 889). On the other hand, Schiffrin et al. (2014) found that overparenting had a weak, negative association with relatedness needs fulfillment. Therefore, this study will add to the body of literature examining this relationship and attempt to further clarify the directionality of the relationship.

This study is also based on the Cues-Filtered-In Perspective (Walther & Parks, 2002) on mediated communication. Scholars utilizing this perspective note that humans can adapt to the reduced cues environment of mediated communication and find ways to add the missing cues (e.g., affect markers) back into the communication (Walther & Parks, 2002). As such, mediated communication becomes similar to face-to-face communication and the effects of the two types of communication are more similar than different. Indeed, several recent studies find few differences in the effects of mediated versus face-to-face communication (e.g., Farrell, 2012; Hancock, 2004). Therefore, relational maintenance and overparenting enacted through ICTs should have similar effects as they do when enacted face-to-face. This study will examine these issues.

Overall, this study has the potential to increase knowledge and help interpersonal relationships in several ways. First, conducting this study will address several gaps in the current literature regarding use of ICTs in interpersonal, namely family, relationships. Much of the existing literature finds a relationship between ICT use and relationship quality but does not examine explanatory mechanisms (cf., Hall & Baym, 2011). This study will add to the nascent

literature on possible mediators of this relationship by examining relational maintenance and overparenting. In addition, by conducting tests of indirect effects, this research will permit an understanding of these processes as a whole while current research has largely examined them separately, as described in the previous paragraphs. Examining these relationships as a whole will provide a better understanding of why and how ICT use influences parent-young adult child relationships.

This study will add to the literature in other ways as well. Current research has not examined how mediated relational maintenance affects parent-young adult child relationships. This study will also contribute to the literature on how overparenting influences parent-young adult child relationships, which is important given the contradictory findings provided by the few studies that have examined the issue (Kelly et al., 2017; Segrin et al., 2012). The majority of the literature on overparenting to date has focused on the influence of overparenting on the young adult's psychological outcomes, rather than the relationship.

In addition, this study will help advance BPNT (Ryan & Deci, 2000a). Existing research has primarily focused on how psychological need fulfillment relates to youths' psychological functioning (e.g., Ratelle, Simard, & Guay, 2013; Schiffrin et al., 2014). Therefore, this study will add to the literature by examining how need fulfillment relates to relationship quality. If the hypotheses are confirmed, the study will also provide additional support for the Cues-Filtered-In Perspective (Walther & Parks, 2002) regarding ICTs.

The results of this study may also provide useful insights for family members and family therapists. If relational maintenance enacted via ICTs helps fulfill young adults' relatedness needs and increases relationship satisfaction, parents wanting to improve relations can try increasing their use. In addition, if ICT use is found to facilitate the enactment of relational

maintenance in parent-young adult child relationships as it has been found to do in other types of close relationships, parents struggling with how to use ICTs in their relationship with their child can be given a better idea of appropriate uses (e.g., offering assurances, self-disclosing). On the other hand, if overparenting through ICTs decreases young adults' relationship satisfaction, there will be reasoning to implore parents to stop or reduce such behaviors.

The subsequent chapter provides a review of relevant literature on parent-young adult child relationships, technology use in parent-young adult child relationships, relational maintenance behaviors, and overparenting. Chapter Three describes the methodology and analytical methods that are utilized in this study. Chapter Four details the findings for the hypotheses and research questions. Chapter Five provides the scholarly, theoretical, and practical implications of the results, as well as limitations and future directions.

Chapter Two:

Literature Review

Parent-Young Adult Child Relationships

Although U.S. society often classifies those who turn 18 ‘adults’, rarely do persons in their late teens and early twenties consider themselves adults (Arnett, 2000) and neither do their parents (Nelson et al., 2007). Instead, young adulthood is a time in which young persons take steps towards adulthood by gradually establishing independence, exploring possibilities for their future, figuring out their personal identities, and becoming responsible for themselves (Aquilino, 1997; Arnett, 2000).

The young adult becomes less dependent on his or her parents during this time; therefore, the parent-child relationship is often renegotiated and redefined (Aquilino, 1997). However, parents remain an important influence as children become young adults. Research finds that parents provide financial assistance, encouragement, and advice to their children in college (Kolkhorst, Yazedjian, & Toews, 2010); this parental support plays a key role in young adults’ adjustment to college (Duchesne, Ratelle, Larose, & Guay, 2007). Several studies find that parent-child relationships grow closer as young persons transition to adulthood (Aquilino, 1997; Kolkhorst et al., 2010). In turn, closeness with each parent influences the young adult’s self-esteem and happiness (Amato, 1994). The power dynamic also often changes, such that young adult children gain a more equal status with their parents, which is sometimes characterized as a friendship (Kolkhorst et al., 2010) or peer (Aquilino, 1997) relationship.

Young adults who are in college interact with their parents 13 times per week on average (Hofer, 2008). Students interviewed for a qualitative study largely reported that they felt that there was open communication between themselves and their parents (Kolkhorst et al., 2010).

Effective communication with parents remains important during young adulthood; Serido, Shim, Mishra, and Tang (2010) found that effective parent communication about finances reduced young adults' psychological distress and contributed indirectly to their well-being. This study will also study parent-young adult child communication, but specifically in mediated contexts, rather than generally.

Technology Use in Parent-Young Adult Relationships

As mentioned earlier, a growing number of studies indicate that use of ICTs influences close relationships. This is true of the parent-young adult child relationship as well. Schon (2014), for example, found that frequency of communication with a parent via ICTs predicted the young adult child's communication and relationship satisfaction. Miller-Ott et al. (2014) found that satisfaction with cell phone use in parent-adult child relationships was associated with the young adult child's relationship satisfaction. Gentzler et al. (2011) found that frequency of phone calls with a parent positively predicted the young adult child's reported intimacy and satisfaction.

Focal technologies. This study will examine three channels that have been found to be commonly utilized by parents and young adults to maintain their relationships (Pew Research, 2015; Schon, 2014). The study by Gentzler et al. (2011) also included these three channels. The channels include: voice calls, text messaging, and the social networking site Facebook.

Voice calls. Voice calls will include both calls that are performed via landline phone and cellular phone, or some combination thereof. Schon (2014) found that 93% of young adults utilized voice calls to communicate with a parent, and Gentzler et al. (2011) found that all 211 of the students surveyed in their study utilized phone calls to communicate with their parents. In addition, Pew Research Center (2015) found that 97% of all adults utilize phone calls to communicate with their parents, making it the most popular channel utilized to foster parent-

adult child communication. Taylor et al. (2006), in a study of adult children of all ages, found that 79% of children reported interacting with a parent via a phone call at least weekly. Satisfaction with the way cellular phones are utilized in parent-young adult child relationships has been found to positively influence relationship satisfaction (Miller-Ott et al., 2014). As there are few differences between voice calls via mobile phone and voice calls via landline phone, it makes sense to examine them together.

Text messaging. Over 85% of Schon's (2014) and Ramsey, Gentzler, Morey, Oberhauser, and Westerman's (2013) participants reported utilizing text messaging to communicate with their parent. It was also the second most popular channel utilized by adult children to contact their parents in a study by Pew Research Center (2015). A study by Reid and Reid (2010) found that use of text messaging was positively associated with a concept they called relational outcomes, which included things such as whether text messaging added something to the relationship.

Facebook. Social networking sites were the fourth most popular means of interacting with parents in Schon's (2014) study of young adults, with 31% reporting doing so. In the Ramsey et al. (2013) study, the percentage was roughly 45% of young adults. Ramsey et al. (2013) noted that use of social networking sites to communicate with a parent had increased dramatically since 2009. Facebook is one popular social networking site within the U.S. Maintaining offline relationships has been found to be a primary use of Facebook (Pempek, Yermolayeva, & Calvert, 2009). Among students whose parent had a Facebook account, over 81% reported being Facebook friends (having their profile connected) with their parent (Ball, Wanzer, & Servoss, 2013). Kanter, Afifi, and Robbins (2012) found that parent-young adult

child conflict decreased when Facebook was added to the channels that young adults and parents utilized to communicate.

Theoretical Underpinning

Basic psychological needs theory. A theory that relates to young persons' transition to adulthood and that is well-suited for the examination of processes in parent-young adult relationships is the Basic Psychological Needs Theory (BPNT) that is a part of Deci and Ryan's (2008b) Self-Determination Theory (SDT). The creators of SDT call it a meta-theory (Self-Determination, 2015) or macrotheory (Deci & Ryan, 2008b). It contains six mini-theories including: Cognitive Evaluation Theory, Organismic Integration Theory, Causality Orientations Theory, Goal Contents Theory, Relationships Motivations Theory, and BPNT (Self-Determination, 2015). BPNT will be utilized in this study because parent-child relationships are an important context for the concepts it examines (Deci & Ryan, 2008b) and because it relates to developmental tasks during young adulthood, such as becoming autonomous, gaining competence via education and experience, and maintaining close relationships. The other theories examine intrinsic and extrinsic motivation and Relationships Motivations Theory is largely subsumed by BPNT (Self-Determination, 2015).

BPNT posits that adults have three psychological needs that must be fulfilled (Ryan & Deci, 2000a; Deci & Ryan, 2008a). These needs are said to be "innate, essential, and universal" and therefore must all be satisfied for an individual to thrive (Ryan & Deci, 2000b, p. 74). These three needs include: autonomy, competence, and relatedness (Ryan & Deci, 2000a). The need for autonomy reflects the idea that individuals need to feel like they can make their own choices and that their choices have an influence on their lives (Deci & Ryan, 2008b, Johnston & Finney, 2010). Deci and Ryan (2008b) note that autonomy is not about whether a decision is made

without help, it is about whether the end choice is the individual's. The need for competence reflects the idea that adults need to feel capable and successful (Johnston & Finney, 2010). Finally, relatedness needs reflect the idea that humans need close, caring relationships (Johnston & Finney, 2010). Only the final need will be examined in this study, as it relates most to the ideas under study.

BPNT predicts that fulfillment of these three needs leads to increased well-being while thwarting of these needs lead to suboptimal human functioning (Ryan & Deci, 2000b). Deci and Ryan (2008a) state "Social contexts that facilitate satisfaction of these three basic psychological needs will…yield the most positive psychological, developmental, and behavioral outcomes...in contrast, social environments that thwart satisfaction of these needs…have deleterious effects on a wide variety of well-being outcomes" (p. 15) In support of this, Ryan and Deci (2000a) found that changes in the fulfillment of each of the three needs predicted changes in the same direction for well-being (Ryan & Deci, 2000).

Deci and Ryan (2008b) note that parents play an important role in the fulfillment of the psychological needs. Research by Ratelle et al. (2013) also acknowledges the important role parents play, despite young adults having other relationships through which these needs could be met (e.g., romantic and friend relationships). Ratelle et al. (2013) found that high levels of reported autonomy support - behaviors that promote college students' autonomy – from parents, friends, and romantic partners were necessary to reach high levels of subjective well-being (SWB); subjective well-being declines when even one of these sources becomes only moderately supportive. Ratelle et al. (2013) stated, "Autonomy support from important sources like parents, friends, and the romantic partner all contributed to higher levels of SWB…the highest levels of SWB were observed when all sources were perceived as highly autonomy supportive" (p. 904).

Schiffrin et al. (2014) found that parents' behaviors that were perceived to thwart fulfillment of the basic psychological needs decreased reported well-being and increased reported depression among young adults. Therefore, perceptions of parents' actions appear to play a role in relation to young adults' basic psychological needs. This study will examine two concepts that likely relate to the fulfillment or thwarting of these needs: relational maintenance and overparenting. These two concepts will be further detailed in forthcoming pages.

Outcome variable. This study will examine relationship satisfaction as an indicator of the positive psychological outcomes and optimal functioning that can result from basic need fulfillment. Relationship satisfaction refers to a positive emotional response that occurs when a relationship with another person is evaluated as rewarding (Beatty & Dobos, 1992). Others have simply conceptualized it as contentment with a relationship (Anderson & Emmers-Sommer, 2006). Relationship satisfaction has commonly been studied in parent-young adult child relationships, both in face-to-face contexts (e.g., Dunleavy, Wanzer, Krezmien, & Ruppel, 2011; Punyanunt-Carter, 2008) and mediated ones (e.g., Gentzler et al., 2011; Ramsey et al., 2013; Schon, 2014).

Young adults' relationship satisfaction with parents seems reasonable to serve as a measure of the positive outcomes that can result from need fulfillment. Scholars of SDT and BPNT (Ryan & Deci, 2000a) have recently begun examining relational well-being in addition to the general well-being that has been traditionally studied in this line of research (e.g., Patrick, Knee, Canevello, & Lonsbary, 2007; Slotter & Finkel, 2009). Relationship characteristics such as commitment, satisfaction, and handling of conflict have been utilized to assess relational well-being (Patrick et al., 2007). Knee and Uysal (2011) state, "Relational well-being is thought to emerge as a function of the relationship context supporting the basic needs of both partners" (p.

96). Knee and Uysal (2011) go on to say, “Without significant others supporting one’s…relatedness, the quality of those relationships will be suboptimal” (p. 100).

The majority of research that has examined need fulfillment in relation to relationship well-being has examined need fulfillment within a specific relationship. For example, one of the items for relatedness needs that Patrick et al. (2007) had participants answer was “When I am with my partner, I feel loved and cared about” (p. 438). These studies have found support for the idea that needs fulfillment positively influences relationship quality. Patrick et al. (2007), for example, found that perceptions that a romantic partner was fulfilling basic needs was positively associated with participants’ relationship satisfaction and commitment. Furthermore, Slotter and Finkel (2009) found that a romantic partner’s fulfillment of relatedness needs predicted an individual’s relationship commitment six months later.

This study will examine relatedness needs fulfillment in general, as the communicative actions taken by a relational partner should feed not only into relatedness needs fulfillment in the relationship, but into relatedness needs fulfillment more broadly. Although fulfillment of general relatedness needs comes from several different types of relationships, Ratelle et al. (2013), as mentioned previously, found the parent relationship to be an important relationship when examining need fulfillment and young adults’ outcomes. Other research also supports the idea that relationship satisfaction with a particular partner, in this case a parent, could stem from general need fulfillment. Life satisfaction or subjective well-being is generally the outcome of general need fulfillment examined in BPNT research (e.g., Johnston & Finney, 2010; Ratelle et al., 2013; Schiffrin et al., 2014), and Leung and Leung (1992) found that adolescents’ relationship satisfaction with their parent was moderately associated with their life satisfaction. In addition, Amato (1994) found that closeness with mothers and fathers predicted life

satisfaction among adult children. Therefore, variables that influence subjective well-being via need fulfillment likely also influence relationship satisfaction with one's parent.

Cues-filtered-in perspective. As this study will examine the use of technology in parent-young adult child relationships, the second theoretical perspective that relates to this study is the Cues-Filtered-In Perspective. As noted by Walther (1996), in the early days of research regarding mediated communication, it was believed that the reduced cues environment of such communication would make it difficult to send and receive complex messages, including those which fostered and maintained close relationships. Social cues missing from most, but not all mediated environments, include facial expressions, paralanguage, body language, and even pheromones (Johnson, 2014). Kiesler (1986) exemplifies this initial Cues-Filtered-Out Perspective, stating "Without nonverbal cues the sender cannot easily alter the mood of a message, communicate a sense of individuality, or exercise dominance or charisma" (p. 48). A theory stemming from the Cues-Filtered-Out Perspective was Media Richness Theory (Daft & Lengel, 1986). A hypothesis based on the theory was that persons engaging in interpersonal communication would prefer to utilize richer media (e.g., those that allow more back and forth interaction, that enable the sending of more social cues) than leaner media (such as text-only communication) because they most resembled face-to-face communication, which was seen as the ideal (Daft & Lengel, 1986). As noted by Walther (1996) and Carlson and Zmud (1994), however, studies based on Media Richness Theory have had mixed results. This is illustrated in a study by Hovick, Meyers, and Timmerman (2003) which found that romantic partners who worked together and who utilized email to communicate reported that email was a rich and important medium in their relationship. Also problematic for the theory was research that found that some people actually preferred leaner media to richer media (e.g., Cummings, Lee, Kraut,

2006). Likewise, researchers, as well as those using the internet, quickly realized that the internet (and the other ICTs that followed) was being used to initiate, maintain, and terminate close relationships (Walther, 1996).

These unexpected findings and their implications about the accuracy of the Cues-Filtered-Out perspective lead to the Cues-Filtered-In Perspective. Those working under this perspective argue that humans are able to adapt to mediated environments and find ways to add the missing social cues back into the interaction (Walther & Parks, 2002). Examples include extended letter use ("VERRRY upset") and emoticons (Hall, Pennington, & Lueders, 2014; Lo, 2008). Walther, Loh, and Granka (2005) explain that "the translation of affect into verbal cues facilitates relational communication" (p. 36). An example of a theory that was created from this perspective and that relates to this study is Channel Expansion Theory (Carlson & Zmud, 1994). Channel Expansion Theory relates to Media Richness Theory in that it also examines the richness/leanness of various channels. However, Channel Expansion Theory does not view richness as a stable characteristic of a given medium; instead, the theory posits that richness is a perception people have of a channel (Carlson & Zmud, 1994). Because humans can adapt their communication, the more experience they have with a channel, the more they learn to adapt and can add social cues back in as needed to convey the message (Carlson & Zmud, 1994). Therefore, the more experience a person has with a channel, the more he or she should perceive it as a rich channel (Carlson & Zmud, 1994). Carlson and Zmud (1994) say, "The history individuals have enacting communication richness on a certain channel will shape their perceptions concerning that channel's richness" (p. 283). Channel Expansion Theory (Carlson & Zmud, 1994) also acknowledges the role of the relationship between the people communicating. The longer the communicators have known each other, the more they can tailor messages to

enhance the other's understanding, which positively influences perceptions of a channel's richness (Carlson & Zmud, 1994). The theory notes that communicators must be motivated to expand the channel (Carlson & Zmud, 1994), which means that it does not overlook the idea that sometimes communicators desire to utilize a channel in lean ways. For example, leaner channels have been found to be preferable for communicating some types of negative news (Sheer & Chen, 2004) or about difficult topics (Mahantanankoon & O'Sullivan, 2008; Yoon, 2003), perhaps because they help the message sender or receiver save face.

Subsequent research has supported Channel Expansion Theory's propositions. Carlson and Zmud (1999) found that experience using email and experience with the communication partner were positively associated with perceived richness of email. Similarly, Timmerman and Madhavapeddi (2008) found that experience with the medium and the partner were associated with perceptions of media richness across the three channels they examined – email, phone, and face-to-face communication. More specifically, Timmerman and Madhavapeddi (2008) found that experience with a given medium and experience with the relational partner increased perceptions of the extent to which the medium allowed for natural language; experience with the relational partner was also associated with increased perceptions of the quickness of the feedback. D'Urso and Rains' (2008) results also support the theory. Experience with the medium and the communication partner were positive predictors of perceived media richness for instant messaging, email, phone, and face-to-face communication (D'Urso & Rains, 2008).

Essentially, these studies and the Cues-Filtered-In Perspective indicate that mediated communication is just another platform or means of communicating and that face-to-face communication and mediated communication are more similar than different, especially since they have similar outcomes and effects. As an example, Walther et al. (2005) found that ratings

of partner affect were equivalent regardless of whether communication occurred face-to-face or via computer chat. Similarly, Hancock (2004) found no differences in the comprehension of irony between face-to-face and computer-mediated communication, despite originally positing that irony would be more likely to be misinterpreted in online settings due to the lack of cues. Likewise, Farrell (2012), in a study of bullied teenagers, found no significant differences in happiness, self-esteem, and peer satisfaction when the bullying occurred offline compared to online, which supports the idea that mediated communication can approximate face-to-face communication. Vlahovic, Roberts, and Dunbar (2012) found a positive relationship between either real laughter or verbal expressions of laughter (e.g., LOL, laughing emoticons) and happiness regardless of whether the communication was face-to-face or via mediated channels such as phone, instant messaging, text messaging, and email/social networking sites. The strength of the relationships varied somewhat (.07-.29) but the overall effects were similar (Vlahovic et al., 2012). Vlahovic et al. (2012) state, "The results for laughter are more supportive of social information processing theory and channel expansion theory, suggesting that humans are capable of adjusting aspects of natural communication, like laughter, to yield expression capacities even within the constraints of text-based CMC" (p. 446). As a final example, Valkenburg and Peter (2007) found that communication online increased friendship closeness just as communication offline has been found to (e.g., Ledbetter & Kuznekoff, 2012). As mentioned earlier, differences between face-to-face communication and mediated communication are smaller when the individuals have had prior interaction (Carlson & Zmud, 1994), which is true of most parents and their young adult children. Research by Alge, Wiethoff, and Klein (2003) found that groups with a prior history who interacted via mediated channels

had few differences from a group that met face-to-face while members of groups with no prior history reported less trust and information sharing than face-to-face groups.

Hypotheses and Research Questions

Now that the theoretical background has been established, the hypotheses and research questions will be provided.

As mentioned previously, results of several studies find a positive association between ICT use and relationship satisfaction in parent-young adult child relationships (Gentzler et al., 2011; Miller-Ott et al., 2014; Ramsey et al., 2013; Schon, 2014). Therefore, hypothesis one is:

> H1: Parent-young adult child ICT use will be positively associated with young adults' reported relationship satisfaction with their parents.

Relational maintenance as a mediator. One possible explanation for this link between ICT use and young adults' relationship satisfaction with their parents lies in relational maintenance. Relational maintenance consists of behaviors that promote relationship continuity and quality (Stafford et al., 2000). Stafford and Canary (1991) originally proposed five relational maintenance behaviors: positivity, openness, assurances, shared tasks, and social networks. Although others have been proposed throughout the years (e.g., Canary, Stafford, Hause, & Wallace, 1993; Stafford et al., 2000), these are the ones most consistently studied. Positivity refers to interacting with the partner in a cheerful, non-criticizing manner (Stafford & Canary, 1991). Openness refers to having conversations about the relationship and one's feelings about it (Stafford & Canary, 1991). Openness has been seen as akin to metacommunication (Bryant & Marmo, 2009). Assurances communicate a desire to continue the relationship (Stafford & Canary, 1991). Sharing tasks involves completing one's portion of the responsibilities in the relationship (Stafford & Canary, 1991), such as paying bills in a marital relationship or helping

plan dad's birthday party in parent-child relationships. Social network behaviors are performed with third parties that are known to both partners in the relationship (Stafford & Canary, 1991). An example would be parents spending time getting to know a child's friend. Research has found that openness is the most commonly reported maintenance behavior across relationship types (e.g., romantic, friendship, family, etc.), followed by assurances, and positivity (Canary et al., 1993).

The forthcoming paragraphs will detail a model by which parent-young adult child ICT use influences young adults' relationship satisfaction via perceptions of relational maintenance and reported relatedness needs fulfillment.

ICT use and perceptions of relational maintenance. As the popularity of ICTs has grown, researchers have realized that they are not just used for entertainment (Padilla-Walker, Nelson, Carroll, & Jensen, 2010) or coordination of activities (Ling & Ytrri, 2002). Instead, researchers have found that they are also used, and sometimes mostly used (Bargh & McKenna, 2004; Sheldon, 2008), for relational maintenance (Brody et al., 2009; Dainton & Aylor, 2002; Houser, Fleuriet, & Estrada, 2012; Ledbetter, 2010a; McEwan et al., 2014).

The idea that channels other than face-to-face could be utilized for relational maintenance was realized early on in relational maintenance research. As a result of asking students how they maintain their relationships, Canary et al. (1993) created a cards, letters, and calls category for behaviors utilized to maintain relationships. Further evidence that ICTs are utilized for relational maintenance is found in Johnson, Haigh, Becker, Craig, and Wigley's (2008) content analysis of college students' emails. Email was found to be a means used by college students to maintain their relationship with their parents, friends, and even romantic partners. Ramirez and Broneck (2009) utilized a similar methodology with the content of instant messaging conversations.

Coders found positivity to be the most common relational maintenance behavior performed via instant messaging, followed by shared tasks and openness. Positivity was utilized most frequently with family members (Ramirez & Broneck, 2009). As a final example, Brody et al. (2009) used the original relationship maintenance scale and altered the directions so that participants answered them only thinking of interaction that occurred via text messaging. Findings indicated that all five types of relational maintenance behaviors were performed via text messaging in both romantic and friendship relationships (Brody et al., 2009).

In addition to finding that ICTs are utilized to enact relational maintenance behaviors, researchers have found a positive association between general use of ICTs (use for any type of activity/content within the relationship) and the performance of relational maintenance via ICTs. As evidence of the link between general ICT use and the performance of relational maintenance, Brody et al. (2009) found that the number of text messages a person sent and received per day was positively associated with their reported relational maintenance in both romantic and friendship relationships. In addition, McEwan et al. (2014) found that intensity of Facebook use and performance of relational maintenance behaviors on Facebook were positively associated, $r = .36$. It does not appear that any studies to date have examined the possible relationship between general technology use and use of ICTs to enact relational maintenance in family contexts. However, it seems likely that the relationship among the variables would be similar since family is another type of close relationship and the relational maintenance behaviors performed in romantic and friend relationships have been found in family relationships as well (Stafford & Canary, 1991). Therefore, hypothesis two is:

> H2: Parent-young adult child ICT use will be positively associated with young adults' perceptions of their parents' relational maintenance via ICTs.

Relational maintenance and relationship quality. Research generally supports the idea that perceptions of relational maintenance relate to relational characteristics like relationship satisfaction. This study will examine young adults' perceptions of the parents' relational maintenance, rather than parents' self-reported relational maintenance. Research in the context of parent-young adult child research has generally found that the young adults' perceptions of their parents' behaviors are better predictors of their reported outcomes than are parents' self-reports of their behaviors (e.g., Palazzolo, Roberto, & Babin, 2012; Segrin et al., 2012).

Prior research finds a positive association between perceptions of a partner's relational maintenance and relational characteristics. For example, both Canary and Stafford (1992) and Canary, Stafford, and Semic (2002) found that one spouse's perceptions of the other spouse's relational maintenance was positively associated with reported liking, commitment, and control mutuality. Stafford and Canary (1991), in the context of romantic relationships, found that perceptions of a partner's relational maintenance were positively associated with liking, commitment, and relationship satisfaction. There is less research on the effects of perceptions of relational maintenance in parent-child relationships. However, Morr, Dickson, Morrison, and Poole (2007) found that perceptions of their family's relational maintenance were positively associated with young adults' reported family satisfaction. In a study of father-daughter relationships, fathers' self-reported relational maintenance predicted their daughters' self-reported communication satisfaction and relationship satisfaction (Punyanunt-Carter, 2008). Given that Canary and Stafford (1992) found moderate to high correlations between one spouse's self-reported relational maintenance and the other spouse's perceptions of the first spouse's relational maintenance, daughters' perceptions of parents' relational maintenance should also influence their relationship satisfaction.

Indirect effects model. The literature reviewed thus far suggests a model whereby perceptions of parents' relational maintenance enacted via mediated channels help explain the relationship between general ICT use and young adults' reported relationship satisfaction with their parent. Prior research provides support for this indirect effects model. First, research by McEwan et al. (2014) found that relational maintenance enacted via Facebook was a better predictor than general Facebook or internet use of relationship satisfaction, closeness, and commitment. McEwan et al. (2014) note, "Facebook relational maintenance strategies appear to be capturing additional variance that is not related to simply using Facebook or desiring online social communication" (p. 258). In regard to the next relationship, that perceptions of parents' relational maintenance via ICTs will be associated with young adults' relationship satisfaction, Canary et al. (2002) found that one spouse's perceptions of the other's relational maintenance were positively associated with the spouse's later evaluations of relational characteristics. These studies validate the placement of relational maintenance in the middle of the process.

As mentioned earlier, one reason relational maintenance may have these effects is because they help fulfill the young adult's relatedness needs. Relatedness needs refer to a person's psychological need to be "part of genuinely caring relationships" (Schiffrin et al., 2014, p. 549) or to feel connected with others (Johnston & Finney, 2010). Relational maintenance behaviors such as tangible assistance and social networks demonstrate care while positivity, openness, and assurances likely promote a person's sense of connection to others. Thus, hypothesis three is:

> H3: Young adults' perceptions of parents' relational maintenance via ICTs will be positively associated with their reported relatedness needs fulfillment.

BPNT (Ryan & Deci, 2000a) predicts that fulfillment of psychological needs will be associated with positive outcomes and healthy functioning. As discussed previously, this study examined young adults' relationship satisfaction with parents as the positive outcome predicted by BPNT. Based on these ideas, it seems likely that relatedness need fulfillment mediates the relationship between relational maintenance and relationship satisfaction. Therefore, the fourth hypothesis is:

> H4: There will be a positive, indirect effect of parent-young adult child ICT use on young adults' reported relationship satisfaction through the increased perceptions of parents' relational maintenance via ICTs and reported increased relatedness needs fulfillment.

Overparenting as a mediator. Another explanation for the link between use of ICTs and relationship quality in parent-young adult relationships may be that general use of ICTs increases the performance of overparenting via ICTs. Overparenting refers to an overly involved parenting style in which a parent or parents proactively or retroactively attempt to manage their child's problems rather than providing age-appropriate help as the child attempts to manage the problem (Segrin et al., 2013). Schiffrin et al. (2014) say, "Parents should adjust their level of involvement and control to their child's developmental level" (p. 549). Such adjustments are not taking place, or are not taking place when they should, in the case of overparenting. Segrin et al. (2012) found that factors such as anticipatory problem solving, affect management, and risk aversion were components of overparenting for young college students. Schiffrin et al. (2014) added controlling the adult child's behavior to that list and confirmed that the parent acting on the adult child's behalf was a component of overparenting. It should be noted, however, that overparenting also includes positive components, such as warmth and support (Fingerman et al., 2012; Padilla-Walker & Nelson, 2012).

As several researchers note, overparenting is about the extent to which particular behaviors are performed, not a matter of whether they are or are not (Bradley-Geist & Olson-Buchanan, 2014; LeMoyne & Buchanan, 2011; Segrin et al., 2012). For example, Segrin et al. (2013) note that two aspects of overparenting are exercising *excessive* control over a child's behaviors and providing *intensive* support. An example provided by Bradley-Geist and Olson-Buchanan (2014) is that parents using a style called involved parenting may ask their children how they performed on an important exam while those engaging in overparenting will ask about grades on each of the smaller assignments before the exam.

Overparenting is called helicopter parenting by the popular press because the parents are seen as hovering overhead, ready to swoop in at any sign of trouble (Cline & Fay, 1990). It is believed that overparenting is enacted with good intentions on the part of the parents; they want the best for their children and to see them succeed (Segrin et al., 2013). Up to 60% of parents of those in college may be helicopter parents (ABC News, n.d.).

ICT use and perceptions of overparenting. ICTs are likely utilized to enact overparenting among parents who utilize that type of parenting style. One aspect of overparenting is the parent intervening to solve the young adult's problems (Segrin et al., 2012). Information gleaned via interaction through ICTs is likely how helicopter parents learn about the situations in which they intervene. Research has found ICTs to be a source of obtaining information via surveillance or spying. The focus group participants in Bryant and Marmo's (2009) study, for example, noted that surveillance was a purpose for utilizing Facebook. One item under this category especially applies to this study, that of "parents…using Facebook to monitor their children" (Bryant & Marmo, 2009, p. 137). Furthermore, Schiffrin et al. (2014) found mothers' requests for regular location updates from the young adult child via call or text

message was a component of overparenting. Peluchette, Kovanic, and Patridge (2010) reported on some parents who kept up-to-date on young adults' job searches by surveillance of their LinkedIn pages. Gibbs (2009) reported that parents have contacted college instructors about their young adult child's grades. It is likely parents are obtaining grade information from their child through mediated channels such as text messages, phone calls, or social media posts that complain about a bad grade.

As was the case with relational maintenance, it seems likely that parent-young adult child ICT use would lead to increased perceptions of overparenting enacted by ICTs. Research by Hofer (2008) supports this idea. Hofer (2008) examined two variables that relate to overparenting – parental academic regulation and behavioral regulation. These attempts to regulate the young adult child's behaviors relate to the anticipatory problem-solving, risk aversion, and tangible assistance that are components of overparenting (Segrin et al., 2013). Hofer (2008) found that frequency of communication (mobile phone calls were the most commonly utilized communication channel) was positively associated with young adults' perceptions of parents' academic and behavioral regulation. In addition, Kelly et al. (2017) found that young adults whose father was classified as engaging in high overparenting had a greater frequency of phone contact with their father than those who fathers were classified as engaging in low or moderate overparenting. Based on this prior literature, the fifth hypothesis is:

> H5: Parent-young adult child ICT use will be positively associated with young adults' perceptions of overparenting via ICTs.

Overparenting and relationship quality. The effects of overparenting on parent-young adult relationships have just begun to be studied; the focus of initial research on overparenting was how the young adult is psychologically affected. Segrin et al. (2012) found that

overparenting was associated with more problematic parent-child communication as well as less open communication. In addition, overparenting negatively affected young adults' family satisfaction due to compromised communication (Segrin et al., 2012). Furthermore, research examining emerging adults suggests they seek a relationship with their parent where power is more equal (Arnett, 1997). These adults' parents doing things on their behalf and limiting their autonomy would not promote such a relationship, possibly reducing young adults' relationship satisfaction. However, Kelly et al. (2017) found that young adults whose father was classified as engaging in moderate or high overparenting reported greater relationship satisfaction than those whose father engaged in low overparenting. In addition, the support and aid that are components of overparenting (Fingerman et al., 2012; Segrin et al, 2012) generally have positive effects on parent-young adult child relationships (e.g., Gentzler et al., 2011). Furthermore, relationship satisfaction is generally affected in the same manner and directionality as support and aid (Ramsey et al., 2013), therefore suggesting that overparenting would be positively associated with young adults' relationship satisfaction. Due to the conflicts in the literature, the first research question is:

RQ1: What is the relationship between young adults' perceptions of overparenting via ICTs and their reported relationship satisfaction with their parents?

Indirect effects model. Overparenting's relationship with young adults' relationship satisfaction may be explained by how it affects their relatedness needs. Deci and Ryan (2008b) note that parents play a critical role in supporting their children's psychological needs. The intensive support, tangible aid, and affect management that comprise overparenting (Fingerman et al., 2012; Segrin et al., 2012) should increase young adults' sense that they are cared for (i.e., relatedness needs). In addition, young adults may realize that even the behavioral control and

age-inappropriate helping (Padilla-Walker & Nelson, 2012) that are aspects of overparenting stem from parents trying to obtain the best outcomes for their child. Based on these ideas, it would seem that overparenting should be positively associated with relatedness needs fulfillment. However, the study by Schiffrin et al. (2014) suggests that overparenting thwarts need fulfillment, as overparenting predicted reduced reported fulfillment of autonomy, competence, and relatedness needs. Due to these conflicting ideas, research question two is:

RQ2: How will young adults' perceptions of overparenting via ICTs be associated with their reported relatedness need fulfillment?

Combining hypothesis five with research questions one and two creates an indirect effects model. This leads to research question three:

RQ3: Is there an indirect effect of parent-young adult child ICT use on young adults' reported relationship satisfaction with their parents through their perceptions of overparenting via ICTs and reported relatedness needs fulfillment?

Lastly, it seems likely that there will be a relationship between the two mediator variables, young adults' perceptions of overparenting and of parents' relational maintenance. For example, a component of overparenting is affect management (Segrin et al., 2012) and relational maintenance involves positivity and reassurances, which may also improve the young adult's mood or calm them down when they are upset. In addition, both variables have been found to be associated with conformity orientation, a communication pattern wherein children are expected to closely follow parents' directives (Ledbetter, 2009; Odenweller, Booth-Butterfield, & Weber, 2014), so it is plausible both behaviors stem from particular family communication patterns. Therefore, hypothesis six is:

H6: Young adults' perceptions of their parents' relational maintenance via ICTs will be positively associated with their perceptions of overparenting via ICTs.

A pictorial representation of this study's hypotheses and research questions is provided in Figure 1.

Chapter Three:

Method

Participants

The final sample utilized for analysis consisted of 491 participants. Participants were recruited from communication courses at a large, public, Midwestern university and were offered a modest amount of course credit or extra credit in return for participation in the survey. Since Arnett (2007) finds that most young people in the U.S. do not meet typical markers of adulthood (e.g., marrying, having children, feeling like an adult) until after age 25 and the focus of this study is on children who are learning to be more independent, data for those over age 25 (n = 5) was discarded. Data from participants who did not communicate with a parent using an ICT at least once per week (n = 15) were also discarded since technology use was a key aspect of this study. Finally, data was discarded for those participants who reported a score of 3.05 or lower on the overparenting scale, because on a scale from one to five, an average score of 3.06 indicates that the participant perceived some overparenting. This step was taken because hypothesis five and research question three are based on the idea that helicopter parents would come to see ICTs as a channel for performing overparenting with increased use and therefore their adult child would perceive more overparenting, not that increased use of technology leads to overparenting from all types of parents.

Procedures

A link to an online survey using Qualtrics was provided to the communication courses in which recruitment took place. Those interested in participating clicked the link, were presented with the information statement (see Appendix A), and then were asked to respond to the

following measures if they chose to continue. All procedures were approved by the university's human subjects committee.

Participants focused on one parent for the measures in this study. Therefore, filter questions were utilized to ascertain the number of individuals whom 1) the participant considered a parent and 2) they spoke with at least once a week utilizing ICTs. Participants who only had one such parent were told to focus on that parent for the remainder of the survey. For participants with more than one such parent, Qualtrics randomly presented them with instructions to either focus on their eldest parent or their youngest parent for whom the guidelines were true.

In addition, participants were assigned to a technology group, which determined which technology was the focus for their responses. Prior research (Gentzler et al., 2011) indicated that a smaller portion of college students (around 50%) utilize social media to communicate with their parents compared to either voice calls (around 98%) or text messaging (around 85%). Therefore, any participant who reported utilizing Facebook to interact with the parent chosen through the parent choice filter questions was automatically assigned to the Facebook group regardless of whether they used any of the other channels or not. Participants who reported only utilizing voice calls to interact with the parent at least once a week were assigned to the voice calls group and participants who reported only utilizing text messages to interact with the parent at least once a week were assigned to the text messages group. Participants who reported utilizing both voice calls and text messaging to interact with the parent at least once a week were randomly assigned to either the voice call or text message group by Qualtrics. As will be discussed momentarily, this selection process resulted in sample differences which prevented cross-group analyses.

Demographic Information by Technology Group

Voice calls sample. There were 195 participants in the sample for this technology group. This sample was 62% female, and the average age was 19.62 (*SD* = 1.79). The reported ethnicity of the participants was 74% Caucasian, 8% African American, 7% Asian, 5% Hispanic, 3% multi-racial, and 3% other. Over 96% of participants reported on interactions with their biological parent while taking the survey, while another 2% reported on a step-parent or adoptive parent. Over 70% of participants reported on a female parent. The average parent age was 51.25 (*SD* = 5.37), and the parent had 2.83 (*SD* = 1.42) children on average. Over 26% of the sample saw this parent at least weekly, 38% saw this parent monthly, and 36% saw this parent 11 or fewer times per year, with 604.64 miles (*SD* = 1571.26) being the average distance students reported living from home during the school year. In addition to using voice calls at least once a week to communicate with this parent, 80% of these participants utilized text messages. No one in this sample reported utilizing Facebook to communicate with their parent at least once a week; participants who reported doing so were automatically assigned to the Facebook group.

Text messaging sample. There were 189 participants in this group. This sample was 53% female, and the average age was 19.23 (*SD* = 1.59). The reported ethnicity of the participants was 84% Caucasian, 7% Asian, 4% Hispanic, 2% African American, 1% multi-racial, and 2% other. Nearly 98% of participants reported on interactions with their biological parent while taking the survey, while another 2% reported on an adoptive parent. Nearly 70% of participants reported on a female parent. The average parent age was 50.81 (*SD* = 5.76), and the parent had 2.81 (*SD* = 1.20) children on average. Over 22% of the sample saw this parent at least weekly, 50% saw this parent monthly, and 28% saw this parent 11 or fewer times per year, with 469.84 miles (*SD* = 1238.95) being the average distance students reported living from home

during the school year. In addition to using text messages at least once a week to communicate with this parent, 65% of these participants utilized voice calls. No one in this sample reported utilizing Facebook to communicate with their parent at least once a week; participants who reported doing so were automatically assigned to the Facebook group.

Facebook sample. The 107 participants in this group reported on use of public and private Facebook interactions to communicate with a parent. This sample was 65% female, and the average age was 19.93 (*SD* = 2.34). The reported ethnicity of the participants was 68% Caucasian, 13% Asian, 5% African American, 5% Hispanic, 3% multi-racial, and 6% other. Nearly 93% of participants reported on interactions with their biological parent while taking the survey, while another 5% reported on a step-parent. Nearly 75% of participants reported on a female parent. The average parent age was 48.31 (*SD* = 6.01), and the parent had 2.73 children (*SD* = 1.38) on average. Nearly 22% of the sample saw this parent at least weekly, 33% saw this parent monthly, and 46% saw this parent 11 or fewer times per year, with 1366.57 miles (*SD* = 2728.10) being the average distance students reported living from home during the school year. In addition to using Facebook at least once a week to communicate with this parent, 93% of these participants utilized text messages and 83% utilized voice calls.

Measures

Reliabilities for all scale measures are provided in Table 1. Variable means and standard deviations are provided for each technology group in Tables 4-7.

Technology use. Four items were utilized to examine parent-young adult child ICT use. First, an item, which was adapted from Ledbetter and Kuznekoff (2012), asked, “How frequently do you and your parent interact via [assigned technology]. This was rated on a scale from 1 (very rarely) to 7 (very often). Three other items were developed for this study to assess the extent that

the technology was utilized in the parent-young adult child relationship. Two items were assessed on a Likert scale from 1 (strongly disagree) to 5 (strongly agree). These items were, "[Assigned technology] is an important means for you and your parent to keep in contact with each other" and "without [assigned technology], you and your parent's communication would be drastically different." One of these items asked, "Compared to other communication technologies you utilize to interact, you and your parent utilize [assigned technology]." This was rated on a scale from 1 (much less than other channels) to 5 (much more than other channels).

Participants assigned to the Facebook technology group answered additional questions in order to separately analyze the effects of public Facebook interactions and private Facebook interactions. As mentioned previously, recent scholarship has found disparate effects depending on the type of Facebook interaction (e.g., Toma & Choi, 2015). Therefore, participants in this group responded to ten items in total regarding their technology use. First, they answered the four questions discussed in the prior paragraph for general Facebook use. Then, the first three of the four questions were asked about public Facebook use and then private Facebook use. For example, the first item for public Facebook use was "How frequently do you and your parent communicate using Facebook messages that others can see?" The third item for private Facebook use was, "Facebook messages that are just between the two of you are an important way for you to keep in contact with each other."

Relational maintenance. Stafford and Canary's (1991) relational maintenance strategy measure (RMSM) was utilized to assess the participants' perceptions of parents' relational maintenance performed via ICTs. This measure was chosen from several possible options because the wording aligns with assessing one partner's perceptions of the other partner's relational maintenance rather than one's own behavior. To reduce survey length, 20 of the

measure's most applicable items were assessed in this study. Items were rated on a Likert scale from 1 (strongly disagree) to 7 (strongly agree). Following Myers and Glover's (2007) and Ledbetter and Beck's (2014) studies about the use of relational maintenance behaviors among parents and young adults, this study changed the wording of the items to indicate that respondents should think of their parent while completing the scale.

In addition, the wording of the directions was changed so participants thought about these behaviors only as performed via the technology to which they were assigned. For example, the directions for the RMSM for the text messaging technology group were "Answer the following questions thinking only of behaviors that your parent engages in through text messages." Other studies have found that the RMSM applies to mediated settings (e.g., Brody et al., 2009) and that the measure is examining the same constructs across the different channels (Ledbetter, 2010a). Sample items include "When communicating using this channel, my parent acts cheerful and positive with me" (positivity), "When communicating using this channel, my parent tells me how they feel about our relationship" (openness), "When communicating using this channel, my parent stresses their commitment to me" (assurances), "When communicating using this channel, my parent discusses people we both know" (social network), and "When using this channel, my parent helps equally with tasks that need to be done" (shared tasks).

Overparenting. Perceptions of overparenting, or the extent to which parents are overly involved in their children's lives, was assessed utilizing a modified version of Segrin et al.'s (2012) overparenting scale. The wording of the scale items was modified to assess items from the young adult's perspective, rather than the parent's, and to prompt participants to respond to the items thinking only about the technology related to the technology group to which they were assigned. In addition, the directions were changed to indicate that participants should think of the

extent to which their parent engages in these behaviors only as performed via the technology to which they were assigned. For example, the directions for the voice call technology group were "Answer the following questions thinking only of behaviors that your parent engages in through voice calls."

For this study, 18 of the scale items were utilized. Each item was rated on a scale from 1 (strongly disagree) to 5 (strongly agree). This scale consists of five subscales that measure components of overparenting. These include risk aversion, child self-direction, tangible assistance, anticipatory problem-solving, and parental advice/affect management (Segrin et al., 2012). Sample items include, "Using this channel, my parent does what they can to keep me out of difficult situations," (risk aversion), "When using this channel, my parent lets me solve most problems on my own" (reverse scored; child self-direction), "When using this channel, my parent indicates they will provide help with basic necessities such as food and clothing," (tangible assistance), "When using this channel, if my parent sees that I am about to have some difficulty, they will intervene to take care of the situation before things get difficult for me," (anticipatory problem solving), and "When I get anxious my parent will say things to calm me down using this channel," (parental advice and affect management).

Relatedness needs. The relatedness needs subscale of the basic needs satisfaction in general scale (BNSG-S) created by Johnston and Finney (2010) was utilized to assess the extent to which the young adults reported that their relatedness needs were being fulfilled. In this study, 13 of the scale items were utilized. They were rated on a scale from 1 (strongly disagree) to 7 (strongly agree). A sample item includes "People in my life care about me."

Relationship satisfaction. Beatty and Dobos' (1992) relationship satisfaction scale was utilized to assess young adults' reported satisfaction with their parent. The scale consists of five

items on a semantic differential scale from one to five. Directions were modified to ensure participants were thinking of the parent they were told to focus on at the beginning of the study. Example items include “unsatisfying/satisfying” and “punishing/rewarding.”

Demographic information and questions pertaining to the extent to which the parent-child relationship is long distance were also collected. Demographic questions as well as items for each of the measures just described are provided in Appendix B.

Data Analysis

The analyses were conducted utilizing structural equation modeling (SEM). SEM is preferential to regression-based methods, because SEM allows for greater flexibility in specifying and estimating mediation models (Preacher & Hayes, 2008). For example, in this study, technology use was not hypothesized to influence relatedness needs fulfillment. Thus, that path was set to zero in the analyses. Version 7 of the program Mplus was utilized to conduct the SEM analysis; maximum likelihood estimation was utilized.

To conduct an SEM analysis, latent variables must be created. The technology use latent variable consisted of the four items mentioned previously (three for the Facebook groups). The relational maintenance latent variable was constructed from the five relational maintenance behaviors subscales. Indicators for the overparenting latent variable were the five overparenting behavior subscales. The total disaggregation method was utilized to create latent variables for relatedness needs satisfaction and relationship satisfaction. The total disaggregation method uses scale items as indicators to create the latent variable (Williams & O’Boyle, 2008).

Each hypothesis and research question and the method for analyzing it are described in the following paragraphs.

Tests of direct effects. Hypothesis one posits that parent-young adult child ICT use will be positively associated with young adults' reported relationship satisfaction with their parents. Hypothesis two predicts that parent-young adult child ICT use will be positively associated with their perceptions of parents' relational maintenance via ICTs. Hypothesis three states that young adults' perceptions of their parents' relational maintenance via ICTs will be positively associated with their reported relatedness needs fulfillment. Hypothesis five posits that parent-young adult child ICT use will be positively associated with young adults' perceptions of overparenting via ICTs. Research question one tests how young adults' perceptions of overparenting are associated with their reported relationship satisfaction. Research question two will examine how young adults' perceptions of overparenting via ICTs will be associated with their reported relatedness need fulfillment. Hypothesis six states that young adults' perceptions of parents' relational maintenance via ICTs with be positively associated with their perceptions of overparenting via ICTs. These hypotheses will be examined based on the significance of the path coefficients for each model.

Tests of indirect effects. Hypothesis four and research question three proposed serial mediation models. Serial mediation models posit a causal chain, such that the independent variable influences the outcome variable through two or more mediators that are causally linked (Hayes, 2013). When analyses support such models and there is a significant direct effect from the independent variable to dependent variable, it is considered mediation; when there is no direct effect from the independent variable to dependent variable, the term used is *indirect effects* (Hayes, 2009).

Hypothesis four posits that there will be a positive, indirect effect of parent-young adult child ICT use on young adults' reported relationship satisfaction with their parents through their

increased perceptions of parents' relational maintenance via ICTs and reported increase in relatedness needs fulfillment. Research question three examines an indirect effect of parent-young adult child ICT use on young adults' relationship satisfaction with their parents through their perceptions of overparenting via ICTs and reported relatedness needs fulfillment. This hypothesis and research question will be analyzed utilizing bootstrapping. Bootstrapping is an advanced technique for examining indirect effects, which involves creating thousands of additional possible samples since the sampling distribution is typically not normally distributed (Hayes, 2009). Hayes (2009) states that bootstrapping treats "the obtained sample of size n as a representation of the population in miniature, one that is repeatedly resampled during analysis as a means of mimicking the original sampling process" (p. 412). To determine the significance of indirect effects, bias-corrected confidence intervals will be utilized. The indirect effect is significant if the confidence interval does not include zero (Hayes, 2009).

Chapter Four:

Results

Preliminary Analyses

Data screening indicated multicollinearity between perceptions of parents' relational maintenance and perceptions of overparenting for the groups that reported on use of voice calls and text messaging. Myers and Well (2003) note that eigenvalues of zero indicate perfect multicollinearity between variables, so very low eigenvalues are a sign of a multicollinearity problem. In addition, Bowerman and O'Connell (1990) state that a multicollinearity problem exists when averaging the variance inflation factors leads to a result greater than one. Both of these criteria were met for the voice calls and text messaging samples, but the Facebook sample was not affected. Hayes (2013) notes that multicollinearity can "muddle the results" of indirect effects analyses due to increases in variance (p. 157).

One strategy for handling multicollinearity is remove one or more of the variables that relate to each other from the analysis (Tabachnick & Fidell, 2013). A principle components analysis helped determine whether to remove the relational maintenance or overparenting variable from the analyses for the voice calls and text messaging groups. In both groups, a portion of the variance of the relational maintenance variable loaded onto the same factor on which over 96% of overparenting loaded. In the voice calls group, the portion of relational maintenance that loaded onto the overparenting factor was 31% (see Table 2) and in the text messaging group this portion was 16% (see Table 3). Overparenting involves warmth and support in addition to age-inappropriate helping behaviors (Padilla-Walker & Nelson, 2012); it is therefore unsurprising that components of relational maintenance would load onto this variable. In examining moderate to strong bivariate correlations among the two variables, the relational

maintenance behaviors of positivity, assurances, and shared tasks correlated with the overparenting behavior of affect management in the text messages group (see Table 5); all five of the relational maintenance behaviors correlated with the overparenting behavior of affect management in the voice calls group, with the smallest correlation between any one of the relational maintenance behaviors and affect management being .44 (see Table 4). The five overparenting behaviors did not load consistently on any of the relational maintenance subscales. Based on the results of the principle components analysis, conceptualizations of the variables, and examination of the correlations matrix, relational maintenance was selected as the variable that would be removed from the analyses for the voice calls and text messaging groups.

The following pages detail the results of the hypotheses and research questions. The results are arranged by technology type. The direct effects sections work their way from the beginning of the model to the end of the model. In regard to effect sizes, R^2 is provided for the direct effects. R^2 provides the portion of a variable's variance explained by the model. For the indirect effects, Mplus does not compute an effect size. The percent mediation (PM) statistic could have been manually computed, but it is often unreliable with samples of less than 500 and therefore is not recommended for use in such samples (MacKinnon, Warsi, & Dwyer, 1995).

Voice Calls Model

Zero-order correlations, means, and standard deviations for key variables in the voice calls model are provided in Table 4.

Voice calls measurement model. First, a CFA was performed for each measure. The model for parent-young adult child voice call use demonstrated good fit, $\chi^2(1, N = 195) = .83$, $p = .36$, RMSEA = .00 (90% CI: .00, .18), SRMR = 0.01, CFI = 1.00. Factor loadings are provided in Table 8.

The model for perceptions of overparenting via voice calls demonstrated excellent fit, $\chi^2(4, N = 195) = 5.28$, $p = .26$, RMSEA = .04 (90% CI: .00,.12), SRMR = 0.03, CFI = .99, after the residual errors for the anticipatory problem-solving and risk aversion subscale were allowed to correlate. Both subscales contain items that involve the parent acting on behalf of the child in regard to problematic or risky situations (e.g., problem solving: "If this parent sees that I am about to have some difficulty, they will intervene to take care of the situation before things get difficult for me," risk aversion: "This parent does what they can to protect me from risky situations"). Factor loadings are provided in Table 8.

The model for reported relatedness need fulfillment demonstrated excellent fit, $\chi^2(2, N = 195) = 1.73$, $p = .42$, RMSEA = .00 (90% CI: .00, .14), SRMR = .01, CFI = 1.00. Factor loadings are provided in Table 8.

The model for reported relationship satisfaction with parents demonstrated excellent fit $\chi^2(2, N = 195) = 1.03$, $p = .60$, RMSEA = .00 (90% CI: .00, .12), SRMR = .01, CFI = 1.00. Factor loadings are provided in Table 8.

After finding good model fit for each latent variable, the measurement model was tested. The measurement model demonstrated good fit, $\chi^2(111, N = 195) = 135.63$, $p = .06$, RMSEA = .03 (90% CI: .00, .05), SRMR = 0.06, CFI = .98.

Voice calls structural model. Next, the hypothesized model, including direct and indirect effects, was tested. The model demonstrated good fit, $\chi^2(112, N = 195) = 135.64$, $p = .06$, RMSEA = .03 (90% CI: .00, .05), SRMR = 0.06, CFI = .98. Parameter estimates are provided in Figure 2 and Table 9. This model was tested before model pruning was begun to ensure that any fully mediated paths were not pruned. However, there was no evidence of full mediation along any paths. Therefore, non-significant direct effects were examined for pruning.

First, a model was examined wherein the path from parent-young adult child voice calls use to young adults' reported relationship satisfaction was set to zero. The model demonstrated acceptable fit, $\chi^2(113, N = 195) = 136.64$, $p = .06$, RMSEA = .03 (90% CI: .00, .05), SRMR = 0.06, CFI = .98. This new model was retained, as the chi-square difference test comparing this model to the previous model was non-significant, $\chi^2_{diff}(1) = 1.00$, $p = .32$.

Next, a model was examined wherein the path from reported relatedness needs fulfillment to young adults' reported relationship satisfaction was set to zero. The model demonstrated acceptable fit, $\chi^2(114, N = 195) = 137.27$, $p = .06$, RMSEA = .03 (90% CI: .00, .05), SRMR = 0.06, CFI = .98. This new model was retained, as the chi-square difference test comparing this model to the previous model was non-significant, $\chi^2_{diff}(1) = .63$, $p = .43$. As no other pruning was needed, this was the final model. Parameter estimates for the direct effects are provided in Figure 3.

Bootstrapping was utilized to calculate the indirect effects for this pruned model. Parameter estimates for indirect effects are provided in Table 10. The model explained 14% of the variance in perceptions of overparenting, 18% of the variance in reported relatedness needs fulfillment and 19% of reported relationship satisfaction with parents.

Results for Hypotheses and Research Questions for Voice Calls Model

Based on this final model (see Figure 3), the results for the hypotheses and research questions were examined. For the direct effects, hypotheses one and five as well as research questions one and two will be discussed. For the indirect effects, research question three will be discussed. Hypotheses two through four and six were not examined as perceptions of parents' relational maintenance was removed from the model due to multicollinearity with perceptions of overparenting.

Direct effects for voice calls model. Hypothesis one stated that reported parent-young adult child voice call use would be positively associated with young adults' reported relationship satisfaction with their parents. This hypothesis was not supported, as this path was constrained to zero in the final model.

Hypothesis five stated that reported parent-young adult child voice calls use would be positively associated with young adults' perceptions of overparenting. This hypothesis was supported ($\beta = .37$, $p < .001$). Research question one examined how young adults' perceptions of overparenting were associated with their reported relationship satisfaction with their parents. Results indicate that young adults' perceptions of overparenting were positively associated with their reported relationship satisfaction ($\beta = .43$, $p < .001$). Research question two examined how young adults' perceptions of overparenting via voice calls would be associated with their reported relatedness need fulfillment. The results indicate that adults' perceptions of overparenting via voice calls were positively associated with their reported relatedness need fulfillment ($\beta = .43$, $p < .001$).

Indirect effects for voice calls model. Research question three examined an indirect effect of reported parent-young adult child voice call use on young adults' reported relationship satisfaction with their parents through their perceptions of overparenting via voice calls and reported relatedness needs fulfillment. This model was not tested and an indirect effect was not found; as indicated above, there was no relationship between reported relatedness needs fulfillment and reported relationship satisfaction. The indirect effect for the other three variables of the causal chain were examined, since they were linked via significant direct effects. The indirect effect of parent-young adult child voice call use on young adults' reported relationship

satisfaction through perceptions of overparenting was significant as the bias-corrected confidence interval did not include zero.

Text Messaging Model

Zero-order correlations, means, and standard deviations for key variables in the text messaging model are provided in Table 5.

Text messaging measurement model. First, a CFA was performed for each measure. The model for parent-young adult child text messaging use demonstrated good fit, $\chi^2(2, N = 189) = 2.48$, $p = .29$, RMSEA = .04 (90% CI: .00, .15), SRMR = 0.02, CFI = 1.00. Factor loadings are provided in Table 11.

The model for perceptions of overparenting via text messaging demonstrated excellent fit, $\chi^2(4, N = 189) = 3.00$, $p = .56$, RMSEA = .00 (90% CI: .00,.10), SRMR = 0.02, CFI = 1.00, after the residual errors for the anticipatory problem-solving and risk aversion subscale were allowed to correlate. Both subscales contain items that involve the parent acting on behalf of the child in regard to problematic or risky situations (e.g., problem solving: "If this parent sees that I am about to have some difficulty, they will intervene to take care of the situation before things get difficult for me," risk aversion: "This parent does what they can to protect me from risky situations"). Factor loadings are provided in Table 11.

The model for reported relatedness need fulfillment demonstrated excellent fit, $\chi^2(1, N = 189) = .16$, $p = .69$, RMSEA = .00 (90% CI: .00, .14), SRMR = .00, CFI = 1.00, after the residual errors for two items were allowed to correlate. The items relate to attitude reciprocity within interpersonal relationships ("I get along with people I come into contact with," "People are generally pretty friendly towards me") so shared error variance is unsurprising. Factor loadings are provided in Table 11.

The model for reported relationship satisfaction with parents demonstrated excellent fit $\chi^2(1, N = 189) = 1.05$, $p = .31$, RMSEA = .02 (90% CI: .00, .19), SRMR = .01, CFI = 1.00, after the residual errors for two items were allowed to correlate. The items are assessed utilizing a semantic differential scale, wherein words that are similar are used among the items. For the two items in question, the wording was "my relationship with this parent is:" "negative, positive" or "punishing, rewarding." Factor loadings are provided in Table 11.

After finding good model fit for each latent variable, the measurement model was tested. The measurement model demonstrated good fit, $\chi^2(95, N = 189) = 100.56$, $p = .33$, RMSEA = .02 (90% CI: .01, .04), SRMR = 0.06, CFI = .99.

Text messaging structural model. Next, the hypothesized model, including direct and indirect effects, was tested. The model demonstrated good fit, $\chi^2(96, N = 189) = 100.61$, $p = .36$, RMSEA = .02 (90% CI: .00, .04), SRMR = 0.06, CFI = 1.00. Parameter estimates are provided in Figure 3 and Table 12. This model was tested before model pruning was begun to ensure that any fully mediated paths were not pruned. However, there was no evidence of full mediation along any paths. Therefore, non-significant direct effects were examined for pruning.

First, a model was examined wherein the path from perceptions of overparenting to reported relationship satisfaction was set to zero. The model demonstrated acceptable fit, $\chi^2(97, N = 189) = 101.06$, $p = .37$, RMSEA = .02 (90% CI: .00, .04), SRMR = 0.06, CFI = 1.00. This new model was retained, as the chi-square difference test comparing this model to the previous model was non-significant, $\chi^2_{diff}(1) = .45$, $p = .50$.

Next, a model was examined wherein the path from parent-young adult child text messaging use to perceptions of overparenting was set to zero. The model demonstrated good fit, $\chi^2(98, N = 189) = 101.77$, $p = .38$, RMSEA = .01 (90% CI: .00, .04), SRMR = 0.06, CFI = 1.00. This

new model was retained, as the chi-square difference test comparing this model to the previous model was non-significant, $\chi^2_{diff}(1) = .71$ $p = .40$.

Next, a model was examined wherein the path from parent-young adult child text messaging use to young adults' reported relationship satisfaction was set to zero. The model demonstrated good fit, $\chi^2(99, N = 189) = 104.32$, $p = .34$, RMSEA = .02 (90% CI: .00, .04), SRMR = 0.07, CFI = .99. This new model was retained, as the chi-square difference test comparing this model to the previous model was non-significant, $\chi^2_{diff}(1) = 2.55$, $p = .11$.

Finally, a model was examined wherein parent-young adult child text messaging use was removed from the model since it had no significant relationships with other key variables. The pruned model demonstrated good fit, $\chi^2(49, N = 189) = 44.83$, $p = .64$, RMSEA = .00 (90% CI: .00, .04), SRMR = 0.05, CFI = 1.00. The chi-square difference test comparing this model to the previous model was non-significant, $\chi^2_{diff}(50) = 59.48$, $p = .17$, indicating that the new model with parent-young adult child text message use removed should be retained. As no other pruning was needed, this was the final model. Parameter estimates for the direct effects are provided in Figure 5.

Bootstrapping was utilized to calculate the indirect effects for this pruned model. Parameter estimates for indirect effects are provided in Table 13. The model explained 6% of the variance in reported relatedness needs fulfillment and 17% of reported relationship satisfaction with parents.

Results for Hypotheses and Research Questions for Text Messaging Model

Based on this final model (see Figure 5), the results for the hypotheses and research questions were examined. For the direct effects, hypotheses one and five well as research questions one and two will be discussed. For the indirect effects, research question three will be

discussed. Hypotheses two through four and six were not examined as the perceptions of parents' relational maintenance variable was removed from the model due to multicollinearity with perceptions of overparenting.

Direct effects for text messaging model. Hypothesis one stated that reported parent-young adult child text messaging use would be positively associated with young adults' reported relationship satisfaction with their parents. This hypothesis was not supported, as reported parent-young adult child text messaging was removed from the final model.

Hypothesis five stated that reported parent-young adult child use of text messaging would be positively associated with young adults' perceptions of overparenting via text messaging. This hypothesis was not supported, as parent-young adult child text messaging was removed from the final model. Research question one examined how young adults' perceptions of overparenting were associated with their reported relationship satisfaction with their parents. No relationship between perceptions of overparenting and reported relationship satisfaction was found, as this parameter was constrained to zero in the final model. Research question two examined how young adults' perceptions of overparenting via text messaging would be associated with their reported relatedness need fulfillment. The results indicate that adults' perceptions of overparenting via text messaging were positively associated with their reported relatedness need fulfillment ($\beta = .24$, $p = .02$).

Indirect effects for text messaging model. Research question three examined an indirect effect of reported parent-young adult child text messaging use on young adults' reported relationship satisfaction with their parents through their perceptions of overparenting via text messaging and reported relatedness needs fulfillment. This model was not tested and an indirect effect was not found; as indicated above, there was no relationship between parent-young adult

child use of text messaging and perceptions of overparenting. The indirect effect for the final three variables of the causal chain was examined, since they were linked via significant direct effects. However, the indirect effect of young adults' perceptions of overparenting via text messaging on young adults' relationship satisfaction with their parents through reported relatedness needs fulfillment was non-significant as the bias-corrected confidence interval included zero.

Public Facebook Model

Zero-order correlations, means, and standard deviations for key variables in the public Facebook model are provided in Table 6.

Public Facebook measurement model. First, a CFA was performed for each measure. The model for parent-young adult child public Facebook use was a just-identified model since it had three indicators, $\chi^2(0, N = 107) = .00$, $p < .001$, RMSEA = .00 (90% CI: .00, .00), SRMR = .00, CFI = 1.00. Factor loadings are provided in Table 14.

The model for perceptions of parents' relational maintenance performed through public Facebook posts demonstrated good fit, $\chi^2(4, N = 107) = 4.22$, $p = .38$, RMSEA = .02 (90% CI: .00, .15), SRMR = 0.02, CFI = 1.00, after the residual errors for the openness and positivity subscales were allowed to correlate. Both types of behaviors can potentially be positive, with parents using openness to discuss how much they love their child. Factor loadings are provided in Table 14.

The model for perceptions of overparenting performed through public Facebook posts demonstrated good fit, $\chi^2(4, N = 106) = 5.16$, $p = .27$, RMSEA = .05 (90% CI: .00,.16), SRMR = 0.03, CFI = .99, after the residual errors for the anticipatory problem-solving and risk aversion subscale were allowed to correlate. Both subscales contain items that involve the parent acting on behalf of the child in regard to problematic or risky situations (e.g., problem solving: "If this

parent sees that I am about to have some difficulty, they will intervene to take care of the situation before things get difficult for me," risk aversion: "This parent does what they can to protect me from risky situations"). Factor loadings are provided in Table 14.

The model for reported relatedness need fulfillment demonstrated good fit, $\chi^2(2, N = 107) = .68$, $p = .71$, RMSEA = .00 (90% CI: .00, .14), SRMR = .01, CFI = 1.00. Factor loadings are provided in Table 14.

The model for reported relationship satisfaction demonstrated good fit, $\chi^2(2, N = 107) = .1.62$, $p = .44$, RMSEA = .00 (90% CI: .00, .18), SRMR = .01, CFI = 1.00. Factor loadings are provided in Table 14.

After finding good model fit for each latent variable, the measurement model was tested. The measurement model demonstrated good fit, $\chi^2(177, N = 107) = 210.96$, $p = .04$, RMSEA = .04 (90% CI: .01, .06), SRMR = 0.07, CFI = .97.

Public Facebook structural model. Next, the hypothesized model, including direct and indirect effects, was tested. The model demonstrated acceptable to good fit, $\chi^2(177, N = 107) = 210.96$, $p = .04$, RMSEA = .04 (90% CI: .01, .06), SRMR = 0.07, CFI = .97. Parameter estimates are provided in Figure 6 and Table 15. This model was tested before model pruning was begun to ensure that any fully mediated paths were not pruned. However, there was no evidence of full mediation along any paths. Therefore, non-significant direct effects were examined for pruning.

First, a model was examined wherein the path from parent-young adult child public Facebook use to young adults' perceptions of parents' relational maintenance was set to zero. The model demonstrated acceptable fit, $\chi^2(178, N = 107) = 210.96$, $p = .05$, RMSEA = .04 (90% CI: .01, .06), SRMR = 0.07, CFI = .97. This new model was retained, as the chi-square difference test comparing this model to the previous model was non-significant, $\chi^2_{diff}(1) = .00$, $p = 1.00$.

Next, a model was examined wherein the path from perceptions of overparenting to young adults' reported relationship satisfaction was set to zero. The model demonstrated acceptable fit, $\chi^2(179, N = 107) = 211.12$, $p = .05$, RMSEA = .04 (90% CI: .00, .06), SRMR = 0.07, CFI = .97. This new model was retained, as the chi-square difference test comparing this model to the previous model was non-significant, $\chi^2_{diff}(1) = .16$, $p = .69$.

Next, a model was examined wherein the path from parent-young adult child public Facebook use to perceptions of parents' relational maintenance was set to zero. The model demonstrated acceptable fit, $\chi^2(180, N = 107) = 211.12$, $p = .06$, RMSEA = .04 (90% CI: .00, .06), SRMR = 0.07, CFI = .97. This new model was retained, as the chi-square difference test comparing this model to the previous model was non-significant, $\chi^2_{diff}(1) = .00$, $p = 1.00$.

Finally, a model was examined wherein the path from perceptions of overparenting to reported relatedness needs fulfillment was set to zero. The model demonstrated acceptable fit, $\chi^2(181, N = 107) = 213.07$, $p = .05$, RMSEA = .04 (90% CI: .00, .06), SRMR = 0.07, CFI = .97. This new model was retained, as the chi-square difference test comparing this model to the previous model was non-significant, $\chi^2_{diff}(1) = 1.95$, $p = .16$. As no other pruning was needed, this was the final model. Parameter estimates for the direct effects are provided in Figure 7.

Bootstrapping was utilized to calculate the indirect effects for this pruned model. Parameter estimates for indirect effects are provided in Table 16. The model explained 35% of the variance in reported relatedness needs fulfillment and 45% of reported relationship satisfaction with parents.

Results for Hypotheses and Research Questions for Public Facebook Model

Based on this final model (see Figure 7), the results for the hypotheses and research questions were examined. The following paragraphs detail the direct and indirect effects for the

public Facebook use model. For the direct effects, hypotheses one through three, five, and six as well as research questions one and two will be discussed. For the indirect effects, hypothesis four and research question three will be discussed.

Direct effects for public Facebook model. Hypothesis one stated that parent-young adult child public Facebook use would be positively associated with young adults' relationship satisfaction. This hypothesis was not supported, as the relationship was negative ($\beta = -.23$, $p = .04$).

Hypothesis two posited that parent-young adult child public Facebook use would be positively associated with perceptions of parents' relational maintenance via Facebook. This hypothesis was not supported, as this path was constrained to zero in the final model. The third hypothesis posited that young adults' perceptions of parents' relational maintenance via Facebook would be positively associated with their relatedness needs fulfillment. This hypothesis was supported ($\beta = .50$, $p < .001$).

Hypothesis five stated that parent-young adult child public Facebook use would be positively associated with perceptions of overparenting. This hypothesis was not supported, as this path was constrained to zero in the final model. Research question one examined how young adults' perceptions of overparenting via public Facebook relate to their reported relationship satisfaction. The results indicate no direct relationship between perceptions of overparenting and reported relationship satisfaction, as this path was constrained to zero in the final model. Research question two examined how perceptions of overparenting were associated with reported relatedness need fulfillment. The results indicate that perceptions of overparenting were not directly associated with relatedness needs fulfillment, as this path was constrained to zero in the final model.

Hypothesis six stated that young adults' perceptions of their parents' relational maintenance via public Facebook would be positively associated with their perceptions of overparenting via Facebook. This hypothesis was supported ($\beta = .64$, $p < .001$).

Indirect effects for public Facebook model. Hypothesis four posited that parent-young adult child public Facebook use would have an indirect effect on reported relationship satisfaction through perceptions of parents' relational maintenance and reported relatedness need fulfillment. This model was not tested and an indirect effect was not found; as indicated above, there was no relationship between parent-young adult child public Facebook use and perceptions of parents' relational maintenance. The indirect effect for the final three variables of the causal chain were examined, since they were linked via significant direct effects. The indirect effect was non-significant as the bias-corrected confidence interval included zero.

Research question three examined an indirect effect of parent-young adult child public Facebook use on young adults' relationship satisfaction through perceptions of parents' overparenting and reported relatedness need fulfillment. This model was not examined as there was no relationship between parent-young adult child public Facebook use and perceptions of overparenting nor was there a relationship between perceptions of overparenting and reported relatedness needs fulfillment.

Private Facebook

Zero-order correlations, means, and standard deviations for key variables in the private Facebook model are provided in Table 7.

Private Facebook measurement model. First, a CFA was performed for each measure. The model for parent-young adult child private Facebook use was a just-identified model since it

had three indicators, $\chi^2(0, N = 107) = .00$, $p < .001$, RMSEA = .00 (90% CI: .00, .00), SRMR = .00, CFI = 1.00. Factor loadings are provided in Table 17.

The model for perceptions of parents' relational maintenance via Facebook use demonstrated good fit, $\chi^2(4, N = 107) = 4.22$, $p = .38$, RMSEA = .02 (90% CI: .00, .15), SRMR = 0.02, CFI = 1.00, after the residual errors for the openness and positivity subscales were allowed to correlate. Both types of behaviors can potentially be positive, with parents using openness to discuss how much they love their child. Factor loadings are provided in Table 17.

The model for perceptions of overparenting via Facebook demonstrated good fit, $\chi^2(4, N = 106) = 5.16$, $p = .27$, RMSEA = .05 (90% CI: .00,.16), SRMR = 0.03, CFI = .99, after the residual errors for the anticipatory problem-solving and risk aversion subscale were allowed to correlate. Both subscales contain items that involve the parent acting on behalf of the child in regard to problematic or risky situations (e.g., problem solving: "If this parent sees that I am about to have some difficulty, they will intervene to take care of the situation before things get difficult for me," risk aversion: "This parent does what they can to protect me from risky situations"). Factor loadings are provided in Table 17.

The model for reported relatedness need fulfillment demonstrated good fit, $\chi^2(2, N = 107) = .68$, $p = .71$, RMSEA = .00 (90% CI: .00, .14), SRMR = .01, CFI = 1.00. Factor loadings are provided in Table 17.

The model for reported relationship satisfaction demonstrated good fit, $\chi^2(2, N = 107) = .1.62$, $p = .44$, RMSEA = .00 (90% CI: .00, .18), SRMR = .01, CFI = 1.00. Factor loadings are provided in Table 17.

After finding good model fit for each latent variable, the measurement model was tested. The measurement model demonstrated good fit, $\chi^2(177, N = 107) = 200.32$, $p = .01$, RMSEA = .04 (90% CI: .01, .06), SRMR = 0.06, CFI = .98.

Private Facebook structural model. Next, the hypothesized model, including direct and indirect effects, was tested. The model demonstrated acceptable to good fit, $\chi^2(178, N = 107) = 203.37$, $p = .09$, RMSEA = .04 (90% CI: .01, .06), SRMR = 0.06, CFI = .98. Parameter estimates are provided in Figure 8 and Table 18. This model was tested before model pruning was begun to ensure that any fully mediated paths were not pruned. However, there was no evidence of full mediation along any paths. Therefore, non-significant direct effects were examined for pruning.

First, a model was examined wherein the path from parent-young adult child private Facebook use to young adults' perceptions of parents' relational maintenance was set to zero. The model demonstrated acceptable fit, $\chi^2(179, N = 107) = 203.45$, $p = .10$, RMSEA = .04 (90% CI: .01, .06), SRMR = 0.06, CFI = .98. This new model was retained, as the chi-square difference test comparing this model to the previous model was non-significant, $\chi^2_{diff}(1) = .08$, $p = .77$.

Next, a model was examined wherein the path from perceptions of overparenting to young adults' reported relationship satisfaction was set to zero. The model demonstrated acceptable fit, $\chi^2(180, N = 107) = 203.74$, $p = .11$, RMSEA = .04 (90% CI: .00, .06), SRMR = 0.06, CFI = .98. This new model was retained, as the chi-square difference test comparing this model to the previous model was non-significant, $\chi^2_{diff}(1) = .29$, $p = .59$.

Next, a model was examined wherein the path from perceptions of overparenting to reported relatedness needs fulfillment was set to zero. The model demonstrated acceptable fit, $\chi^2(181, N = 107) = 204.96$, $p = .11$, RMSEA = .04 (90% CI: .00, .06), SRMR = 0.07, CFI = .98. This

new model was retained, as the chi-square difference test comparing this model to the previous model was non-significant, $\chi^2_{diff}(1) = 1.22$, $p = .27$.

Next, a model was examined wherein the path from parent-young adult child private Facebook use to reported relationship satisfaction was set to zero. The model demonstrated acceptable fit, $\chi^2(182, N = 107) = 205.53$, $p = .11$, RMSEA = .04 (90% CI: .00, .06), SRMR = 0.07, CFI = .98. This new model was retained, as the chi-square difference test comparing this model to the previous model was non-significant, $\chi^2_{diff}(1) = .57$, $p = .45$. As no other pruning was needed, this was the final model. Parameter estimates for the direct effects are provided in Figure 9.

Bootstrapping was utilized to calculate the indirect effects for this pruned model. Parameter estimates for indirect effects are provided in Table 19. The model explained 9% of the variance in perceptions of overparenting, 26% of the variance in reported relatedness needs fulfillment and 41% of variance for reported relationship satisfaction with parents.

Results for Hypotheses and Research Questions for Private Facebook Model

Based on this final model (see Figure 9), the results for the hypotheses and research questions were examined. The following paragraphs detail the direct and indirect effects for the private Facebook use model. For the direct effects, hypotheses one through three, five, and six as well as research questions one and two will be discussed. For the indirect effects, hypothesis four and research question three will be discussed.

Direct effects for private Facebook model. Hypothesis one stated that parent-young adult child private Facebook use would be positively associated with young adults' relationship satisfaction. This hypothesis was not supported, as this path was constrained to zero in the final model.

Hypothesis two posited that parent-young adult child private Facebook use would be positively associated with perceptions of parents' relational maintenance behaviors. This hypothesis was not supported, as this path was constrained to zero in the final model. The third hypothesis posited that young adults' perceptions of parents' relational maintenance via Facebook would be positively associated with reported relatedness need fulfillment. This hypothesis was supported ($\beta = .51$, $p < .001$).

Hypothesis five stated that parent-young adult child private Facebook use would be positively associated with young adults' perceptions of overparenting. This hypothesis was supported ($\beta = .29$, $p = .001$). Research question one examined how young adults' perceptions of overparenting via Facebook related to their reported relationship satisfaction. The results indicate no direct relationship between perceptions of overparenting and reported relationship satisfaction, as this path was constrained to zero in the final model. Research question two examined how perceptions of overparenting were associated with reported relatedness need fulfillment. The results indicate that perceptions of overparenting were not directly associated with relatedness needs fulfillment, as this path was constrained to zero in the final model.

Hypothesis six stated that young adults' perceptions of their parents' relational maintenance would be positively associated with their perceptions of overparenting. This hypothesis was supported ($\beta = .68$, $p < .001$).

Indirect effects for private Facebook model. Hypothesis four posited that parent-young adult child private Facebook use would have an indirect effect on young adults' reported relationship satisfaction through perceptions of parents' relational maintenance and reported relatedness need fulfillment. This model was not tested and an indirect effect was not found; as indicated above, there was no relationship between parent-young adult child private Facebook

use and perceptions of parents' relational maintenance. The indirect effect for the final three variables of the causal chain was examined, since they were linked via significant direct effects. However, the indirect effect was non-significant as the bias-corrected confidence interval included zero.

Research question three examined an indirect effect of parent-young adult child private Facebook use on young adults' relationship satisfaction through perceptions of overparenting and reported relatedness need fulfillment. This indirect effect was non-existent as there was no relationship between perceptions of overparenting and reported relatedness needs fulfillment.

Chapter Five:

Discussion

Research generally finds that use of information communication technologies (ICTs) affects interpersonal relationships (e.g., Hall & Baym, 2011; Jin & Pena, 2010; Ledbetter et al., 2011). The aim of this study was to examine variables that may help explain this relationship in parent-young adult child relationships. Based on Basic Psychological Needs Theory (Ryan & Deci, 2000a) and the Cues-Filtered-In Perspective (Walther & Parks, 2002), the mediators that were examined as potential explanatory mechanisms for why ICT use influences relationship satisfaction in parent-young adult child relationships were overparenting and relational maintenance.

The following sections will detail the findings for the hypotheses and research questions, broken down by the technology type on which the sample reported.

Voice Calls Model

One group of participants reported on use of voice calls with their parents. The following paragraphs detail the direct and indirect effects for this sample. For the direct effects, hypotheses one and five as well as research questions one and two will be discussed. For the indirect effects, research question three will be discussed. Hypotheses two through four and six were not examined as perceptions of parents' relational maintenance was removed from the model due to multicollinearity with perceptions of overparenting.

Direct effects for voice calls model. Hypothesis one predicted that parent-young adult child use of ICT`s would be positively associated with the young adult's reported relationship satisfaction. This hypothesis was not supported, indicating that use of voice calls in parent-young adult child relationships does not influence the young adults' relationship satisfaction. This result

contradicts the findings of Gentzler et al. (2011) and Ramsey et al. (2013) who found that phone calls were positively associated with satisfaction in parent-young adult child relationships. One reason for these differences could be that Gentzler et al. (2011) and Ramsey et al. (2013) had their participants report on the parent to whom they were the closest while this study focused on either the parent with whom the young adult utilized technology at least once a week or a randomly selected parent if more than one met the technology use criteria. It is possible that voice calls with a close parent promote relationship satisfaction while phone calls with a parent to whom the young adult child is less close have no influence on relationship satisfaction, perhaps because they are viewed as a familial obligation. In addition, this study focused on young adults who sensed some overparenting occurring. Therefore, it may be the case that voice calls with a helicopter parent do not influence relationship satisfaction while voice calls with a parent who does not overparent do influence relationship satisfaction. Another possibility for the different results in this study compared to Gentzler et al. (2011) and Ramsey et al. (2013) is that those studies utilized a one-item measure based on frequency of contact (e.g., monthly, weekly, etc.) for technology use while this study utilized broader questions that aimed to assess participants' perceptions of their technology use with their parent (e.g., the endpoints of the scale for frequency of contact were *very rarely* to *very often*). It is important to note, as will be discussed momentarily, voice calls did influence a second variable (perceptions of overparenting) that then influenced young adults' relationship satisfaction with their parent.

Hypothesis five stated that parent-young adult child use of ICTs would be positively associated with young adults' perceptions of overparenting via ICTs. This hypothesis was supported, indicating that greater use of voice calls in parent-young adult child relationships where overparenting is reported increases the young adults' perceptions that their parent is

engaging in overparenting through voice calls. Channel Expansion Theory (Carlson & Zmud, 1994) may explain this finding. Parents who gain experience using voice calls due to increased frequency of communication with their young adult child may come to view voice calls as a richer channel than they previously thought. They may then feel more comfortable or able to engage in complex behaviors such as providing intensive support and discouraging risky behaviors via voice calls. Therefore, young adults may perceive increased overparenting via voice calls because increased frequency of contact leads the parent to recognize the effectiveness of voice calls as a tool to accomplish complex communicative goals.

The positive relationship between parent-young adult child voice calls use and young adults' perceptions of overparenting aligns with Hofer's (2008) research which found that frequency of contact via ICTs was positively associated with parental regulation (e.g., discussing limiting drinking) and negatively associated with autonomy development. Phone calls were the most commonly utilized ICT in Hofer's (2008) study. Overparenting has been conceptualized as a limiting of autonomy (Padilla-Walker & Nelson, 2012) and has been associated with young adults' reports of reduced fulfillment of their need for autonomy (Schiffrin et al., 2014). Therefore, the results of both the current study and Hofer's (2008) suggest that young adults' perceptions that their parent is attempting to limit their autonomy when interacting via voice calls increase as the use of voice calls in the parent-young adult child relationship increases. Hofer (2008) states, "Continued parental intervention in the college years appears to be abetted by the frequent communication made possible by current technology" (p. 21). The advice and affect management subscale contributed highly to the overparenting construct; therefore, it may be the case that overparenters choose voice calls to enact overparenting behaviors such as affect management. Voice calls allow for the social cues associated with paralanguage, which may help

the parent better determine the young adult's emotional state and reaction to attempts to boost or change their child's emotional state.

Research question one tested how young adults' perceptions of overparenting via voice calls would be associated with their reported relationship satisfaction. The results indicated that young adults' perceptions of overparenting via voice calls are positively associated with their reported relationship satisfaction. This aligns with the findings of Kelly et al. (2017) who, in a study of young adults who communicated with their parent through mobile phones, found that young adults with fathers classified as high overparenters reported greater relationship satisfaction than those with fathers classified as moderate or low overparenters. The present study demonstrates that perceptions of overparenting performed specifically through voice calls influence young adults' reported relationship satisfaction. Examination of the bivariate correlations for the present study indicates that the overparenting subscale of advice and affect management is most strongly associated with reported relationship satisfaction. Therefore, parents' provision of or at least the perceptions of parents' provisions of emotional support seem to drive this relationship. This finding will be detailed further in the Practical Implications Section.

Research question two examined how young adults' perceptions of overparenting via ICTs would be associated with their reported relatedness need fulfillment. The results indicated that perceptions of overparenting via voice calls were positively associated with relatedness needs fulfillment. In examining the correlations between the overparenting subscales and relatedness needs fulfillment, it appears that perceptions of parents providing emotional support and tangible assistance drive this association. Such support would likely increase one's sense of

having caring relationships. Further discussion of this finding will occur in the Scholarly Implications Section, as this finding was consistent across the technology use groups.

Indirect effects for voice calls model. Research question three examined an indirect effect of parent-young adult child ICT use on young adults' reported relationship satisfaction with their parents through their perceptions of overparenting via ICTs and reported relatedness needs fulfillment. The results provided support for an indirect effect of parent-young adult child use of voice calls on young adults' relationship satisfaction but not in the manner originally theorized. Relatedness needs fulfillment was not part of the causal chain. Use of voice calls had a significant and positive indirect effect on relationship satisfaction but only through one variable, perceptions of overparenting. Use of voice calls influences young adults' relationship satisfaction with their parents because of increased perceptions of overparenting. The overparenting subscales of advice and affect management and tangible assistance contributed highly to the overparenting construct; as such, it appears that use of voice calls in the parent-young adult child relationship promotes perceptions of the parent providing emotional and tangible support, which is then associated with increased reported relationship satisfaction. This helps explain Kelly et al.'s (2017) finding that young adults whose father was classified as a high overparenter reported greater relationship satisfaction than those whose father was classified as a moderate or low overparenter.

Text Messages Model

A second group of participants reported on use of text messaging with their parents. The following paragraphs detail the direct and indirect effects for the text messaging model. For the direct effects, hypotheses one and five as well as research questions one and two will be discussed. For the indirect effects, research question three will be discussed. Hypotheses two

through four and six were not examined as perceptions of parents' relational maintenance was removed from the model due to multicollinearity with perceptions of overparenting.

Direct effects for text messaging model. Hypothesis one predicted that parent-young adult child use of ICTs would be positively associated with young adults' reported relationship satisfaction. This hypothesis was not supported, indicating that use of text messaging in parent-young adult child relationships where overparenting is reported has no influence on young adults' relationship satisfaction with their parents. Gentzler et al. (2011) in their study of parent-adult child relationships as well as Jin and Pena (2010) in their study of romantic relationships had similar findings, such that use of text messaging had no effect on relational outcomes such as satisfaction, intimacy, love, commitment, and relationship uncertainty. On the other hand, Reid and Reid (2010) found that text messaging was positively associated with relational outcomes. The Gentzler et al. (2011), Jin and Pena (2010), and present study all examined college student populations while Reid and Reid's (2010) participants were only 50% college students. Young persons are known to send and receive large numbers of text messages (e.g., Brody et al., 2009; Hall & Baym, 2012), so perhaps messages communicated in this manner are viewed more casually and as less meaningful than interactions held through other channels for younger persons. Another reason for the different findings relates to Reid and Reid's (2010) utilization of a less nuanced yes or no rating scale to assess how text messaging effects relationships, while the previously listed studies used Likert scales. Thus, the Reid and Reid (2010) study indicates that use of text messaging is associated with better outcomes than no text messaging while the present study indicates that increased use of text messaging is not associated with increased relationship satisfaction. Finally, Reid and Reid (2010) examined two specific reasons for using text messaging – for strategic self-presentation and for back-and-forth interactions that resemble

face-to-face conversations – while the previously mentioned studies examined more general use. This quote from Reid and Reid (2010) likely explains these different findings: “The weight of evidence points to the [idea] that recognising and exploiting these affordances is a prior and necessary step towards the attainment of the interpersonal benefits that SMS can bring” (p. 17). Young adults’ relationship satisfaction may be unaffected by parents’ use of text messaging because their parents have not discovered or are unable to skillfully utilize the technology in a beneficial manner. Overall, these results suggest that is it not the frequency or amount of text messaging that drives outcomes but instead the ways in which it is used.

Hypothesis five stated that parent-young adult child use of ICTs would be positively associated with young adults’ perceptions of overparenting via ICTs. This hypothesis was not supported, indicating that the amount of text messaging does not affect perceptions of overparenting via text messaging. Text messaging is considered a lean channel when there is a lag in response time and due to the reduced social cues, so Media Richness Theory (Daft & Lengel, 1986) may explain these results. Media Richness Theory (Daft & Lengel, 1986) claims that it is difficult to engage in complex communication via lean channels. Therefore, overparenting via text messaging may be restricted to a certain level due to the difficulty of communicating more complex ideas via text messaging, and therefore, the amount text messaging is utilized in the relationship does not influence perceptions of overparenting. Another possible explanation is that young adults who are overparented just assume their parent is engaging in some level of overparenting regardless of the amount of text messaging interaction, especially since some of the overparenting behaviors, such as anticipatory problem-solving, could be performed without direct interaction with the young adult, once the potential problem is recognized.

Research question one tested how young adults' perceptions of overparenting via text messaging would be associated with their reported relationship satisfaction. The results indicated that young adults' perceptions of overparenting via text message are not associated with their reported relationship satisfaction. Given that this relationship was significant or was implied for the other technology types, this finding aligns with broader research in regard to text messaging, which suggests that use of text messaging has little effect on relational characteristics such as relationship satisfaction (e.g., Gentzler et al., 2011; Jin & Pena, 2010). This study more specifically demonstrates that even perceptions of a particular behavior performed via text messaging – overparenting – do not influence young adults' reported relationship satisfaction. As was discussed for hypothesis five, this may relate to the casual nature of text messaging, perceptions of messages being sent via this medium as less meaningful, or perhaps parents' ineffective use of text message to enact overparenting.

Research question two asked how young adults' perceptions of overparenting via ICTs would be associated with their reported relatedness need fulfillment. The results indicated that increased perceptions of overparenting were associated with increased reported relatedness needs fulfillment. Examination of the correlations (see Table 5) indicates that perceptions of affect management and tangible assistance most highly correlated with relatedness needs fulfillment. As this result was a consistent finding across the technologies examined in this study, this finding will be further detailed in the Scholarly Implications Section.

Indirect effects for text messaging model. Research question three examined an indirect effect of parent-young adult child ICT use on young adults' reported relationship satisfaction with their parents through their perceptions of overparenting via ICTs and reported relatedness needs fulfillment. The indirect effect addressed in the research question was non-existent

because technology use was not significantly associated with perceptions of overparenting. The direct effects between each of the final three variables of the chain were as predicted, but the indirect effect was non-significant. However, young adults' perceptions of overparenting were associated with increased reported relatedness needs fulfillment. Increased reported relatedness needs fulfillment, in turn, was associated with increased relationship satisfaction. This suggests that these variables operate independently, rather than as a collective. Returning to the theorized indirect effect, parent-young adult child text messaging use may not influence young adults' reported relationship satisfaction through perceptions of overparenting and reported relatedness needs fulfillment due to the nature of text messaging. A common use of text messaging is for making or altering plans and facilitating other instrumental tasks (Ling & Yttri, 2002). Therefore, increased use would not be associated with increased perceptions of overparenting or relatedness needs fulfillment. Many young adults also send and receive large numbers of text messages per day (e.g., Jin & Pena, 2010), and therefore text messages may not influence reported relationship satisfaction because they are perceived as less meaningful as messages exchanged through other channels due to their commonality. Another possibly relates to the unique language (e.g., LOL, l8r) and norms related to text messaging. Parents may not be aware of these issues or as skilled at using text messaging as other channels, and therefore they cannot as effectively convey messages that influence young adults' perceptions of overparenting, reported need fulfillment, and reported relationship satisfaction.

Public Facebook Model

A third group of participants reported on use of public Facebook interaction with their parents. The following paragraphs detail the direct and indirect effects for the public Facebook use model. For the direct effects, hypotheses one through three, five, and six as well as research

questions one and two will be discussed. For the indirect effects, hypothesis four and research question three will be discussed

Direct effects for public Facebook model. Hypothesis one predicted that parent-young adult child use of ICTs would be positively associated with young adults' reported relationship satisfaction with their parent. This hypothesis was not supported because public use of Facebook was negatively associated with relationship satisfaction. This result contradicts research by Ledbetter et al. (2011) which found that Facebook communication was positively associated with relational closeness among persons who were Facebook 'friends'. It may be the case that parents' Facebook communication that is public in nature embarrasses the young adult, therefore reducing satisfaction with the relationship while peers have more awareness of Facebook norms and engage in more appropriate Facebook communication. Simonpietri (2011) found that 27% of her college student sample did not want to friend their parent on Facebook due to concerns about the parent embarrassing them. It could also be the case that public use of Facebook harms the parent-young adult child relationship because it provides the parent with increased information on the young adult's activities, which could then lead to increased conflict over how the young adult is managing their life. However, this option seems less likely since Kanter et al. (2012) found that young adults who friended their parent on Facebook reported decreased conflict. Similar to the present study, Gentzler et al. (2011) and Ramsey et al. (2013) found a negative relationship between use of social networking sites and young adults' relationship satisfaction with their parent, although the relationships were non-significant and much weaker than found in this study (e.g., -.03, -.12). Gentzler et al. (2011) and Ramsey et al. (2013) utilized multiple regression to generate their results; perhaps error, which the present study's use of SEM better minimizes, was masking a significant effect. Another possibility stems from the fact that these

other studies examined public and private social networking site communication together in one variable, so it may be the case that it is more so public use of social media such as Facebook that has negative effects on young adults' relationship satisfaction. Echoing the present study, Toma and Choi (2015) found that wall posts from a partner, which are public, were negatively associated with relationship commitment. Research by Bazarova and Choi (2014) suggests this may be due to the different motivations behind the type of post – with the motivation for public posts being self-directed, including social validation and self-expression, and the motivation for private posts being relational development. Based on the results of the present study and the related literature, it appears that public Facebook use may negatively influence relationships.

Hypothesis two posited that parent-young adult child use of ICTs would be positively associated with young adults' perceptions of their parents' relational maintenance via ICTs. This hypothesis was not supported, as public Facebook interaction was unrelated to perceptions of parents' relational maintenance. If participants were primarily using text-based means to communicate on Facebook (e.g., wall posts), Media Richness Theory (Daft & Lengel, 1986) may explain this result. The lean nature may restrict relational maintenance; therefore, additional public Facebook interaction does not increase perceptions of relational maintenance. As was mentioned previously, the perceived motivation of the post may factor into this result as well, such that young adults who think their parent is merely posting to receive social validation do not sense increased relational maintenance.

Hypothesis three predicted that young adults' perceptions of parents' relational maintenance via ICTs would be positively associated with young adults' reported relatedness needs fulfillment. This hypothesis was supported; increased perceptions of parents' relational maintenance were associated with increased relatedness needs

fulfillment. This appears to be a new finding in the literature. This result is logical given that perceptions of behaviors such as shared tasks and positivity should increase young adults' liking of others and the sense that others are friendly towards them. Indeed, examination of the correlation table (Table 6) suggests that it is chiefly perceptions of parents' relational maintenance behaviors such as positivity, assurances, and shared tasks that drive reported relatedness needs fulfillment. Therefore, a practical implication of this finding is that parents who believe their young adult child is experiencing a lack of close, caring relationships can be more cheerful and fun with their child.

Hypothesis five stated that parent-young adult child use of ICTs would be positively associated with young adults' perceptions of overparenting via ICTs. This hypothesis was unsupported, as public use of Facebook had no influence on young adults' perceptions of overparenting via Facebook. If parents and young-adult children are primarily utilizing text to communicate on Facebook, it may be the case that the lean nature of the Facebook communication limits the amount of overparenting performed and therefore perceptions of it. Another reason that public use of Facebook may not influence perceptions of overparenting is that active interaction between parents and young adults is not necessary for the parent to use Facebook for overparenting. Young adults may create a post with the intention of reaching their friends, but their parent may be part of the audience who sees the post. The parent could then use that information to engage in anticipatory problem-solving. Therefore, the parent could engage in overparenting via Facebook, thus increasing perceptions of it, without the young adult reporting increased public Facebook use that is specifically with their parent. In addition, young adults associate with Facebook with "facestalking" or parents using it to surveil their child (Jackson,

2011, p. 42); young adults may therefore assume overparenting is occurring through Facebook regardless of the amount of interaction they are having with their parent on the platform.

Research question one tested how young adults' perceptions of overparenting via Facebook use would be associated with their reported relationship satisfaction. Perceptions of overparenting via Facebook had no direct relationship with young adults' reported relationship satisfaction. However, there were significant bivariate correlations (see Table 6) between four of the five overparenting subscales and reported relationship satisfaction. In the SEM model, perceptions of overparenting were positively associated with perceptions of parents' relational maintenance, which in turn, was associated with reported relationship satisfaction. This suggests that perceptions of overparenting are likely associated with reported relationship satisfaction, but that in this model perceptions of parents' relational maintenance drives the effect on reported relationship satisfaction more so than perceptions of overparenting. This result will be detailed further in the Practical Implications Section as the finding of a positive relationship between perceptions of overparenting and young adults' reported relationship satisfaction was also found in the voice calls model.

Research question two examined how young adults' perceptions of overparenting via ICTs would be associated with their reported relatedness need fulfillment. Perceptions of overparenting via Facebook had no direct relationship with relatedness needs fulfillment. However, there were significant bivariate correlations (see Table 6) between three of the five overparenting subscales and reported relatedness needs fulfillment. In the SEM model, perceptions of overparenting were positively associated with perceptions of parents' relational maintenance, which in turn, was associated with relatedness needs fulfillment. This suggests that perceptions of overparenting are likely associated with relatedness needs fulfillment, but that in

this model perceptions of parents' relational maintenance drives the effect on relatedness needs fulfillment more so than perceptions of overparenting.

Hypothesis six stated that young adults' perceptions of their parents' relational maintenance via ICTs would be positively associated with their perceptions of overparenting via ICTs. This hypothesis was supported. The advice and affect management subscale highly contributed to the perceptions of overparenting construct and the positivity subscale highly contributed to the perceptions of parents' relational maintenance construct; therefore, it appears the two variables' commonality may be in provisions of emotional support. Broader implications of this result are detailed in the Scholarly Implications Section as this result was consistent across the four technology types examined in this study.

Indirect effects for public Facebook model. Hypothesis four posited that there would be a positive, indirect effect of parent-young adult child ICT use on young adults' reported relationship satisfaction with their parents through their increased perceptions of parents' relational maintenance via ICTs and reported increase in relatedness needs fulfillment. This indirect effect was non-significant as public Facebook use was not associated with perceptions of parents' relational maintenance. There were the necessary linkages among the final three variables in the causal chain to examine an indirect effect; however, the indirect effect of perceptions of parents' relational maintenance on young adults' relationship satisfaction through increased relatedness needs fulfillment was non-significant, indicating there is no causal chain. Perceptions of parents' relational maintenance had a direct, positive relationship with young adults' reported relationship satisfaction, which suggests increased relatedness needs fulfilment is not necessary for perceptions of relational maintenance to influence relationship satisfaction. That said, increases in perceptions of parents' relational maintenance was associated with

increased reported relatedness needs fulfillment, which in turn, was associated with increased relationship satisfaction. This result is akin to that for the text messaging sample. As mentioned in that section, it may be the case that these variables operate independently rather than collectively. Parent-young adult child public Facebook use was also measured less reliably than use for the other technologies examined in this study, so that may have contributed to the lack of effects. It may be difficult for young adults to assess public use of Facebook for several reasons. First, young adults may have to guess whether a parent saw their activity on Facebook, unless the parent left an artifact indicating that they did (e.g., a 'like', comment, etc.). In addition, the young adults may have been unsure about whether to include posts they send out to others (e.g., friends or co-workers) but that their parent may have seen. Future studies could measure specific public Facebook behaviors ('likes', comments, etc.) to mitigate this potential issue.

Research question three examined the indirect effect of parent-young adult child ICT use on young adults' reported relationship satisfaction with their parents through their perceptions of overparenting via ICTs and reported relatedness needs fulfillment. The indirect effect was non-significant as technology use was not associated with perceptions of overparenting. The aforementioned substandard reliability of the measure for public Facebook use, coupled with the somewhat low sample size for the Facebook sample, may have made it too difficult to detect the effects of public Facebook use.

Private Facebook Model

The third group of participants also reported on use of private Facebook interaction with their parents. The following paragraphs detail the direct and indirect effects for the private Facebook interaction sample. For the direct effects, hypotheses one through three, five, and six

as well as research questions one and two will be discussed. For the indirect effects, hypothesis four and research question three will be discussed

Direct effects for private Facebook model. Hypothesis one predicted that parent-young adult child private Facebook use would be positively associated with young adult children's relationship satisfaction with their parent. This hypothesis was not supported; use of private Facebook interaction had no relationship with relationship satisfaction. This result aligns with Gentzler et al. (2011) who found that frequency of social networking sites communication had no effect on relationship satisfaction. The results for the other hypotheses in the Facebook sample suggest that it may be more so the behaviors enacted through Facebook interactions (i.e., overparenting, relational maintenance) that influence relationship satisfaction rather than the amount of use itself.

Hypothesis two posited that parent-young adult child private Facebook use would positively predict young adults' perceptions of their parents' relational maintenance via ICTs. This hypothesis was not supported, as private Facebook interaction had no influence on young adults' perceptions of their parents' relational maintenance. As was the case with public Facebook interaction, Media Richness Theory (Daft & Lengel, 1986) may explain this result. Using Facebook in a lean manner may restrict relational maintenance; therefore, additional private Facebook interaction would not increase perceptions of relational maintenance.

Hypothesis five stated that parent-young adult child private Facebook use would positively predict young adults' perceptions of overparenting via ICTs. This hypothesis was supported, as increased private Facebook interaction was associated with increased perceptions of overparenting. As was the case for the voice calls model, Channel Expansion Theory (Carlson & Zmud, 1994) may explain this finding. Young adults may perceive increased overparenting

via private Facebook because increased frequency of contact leads the parent to view and use private Facebook interactions as a richer rather than leaner channel of communication.

The finding that parent-young adult child private Facebook use was positively associated with young adults' perceptions of overparenting via Facebook differed from the findings for the public Facebook model. Private interactions may allow parents to ask questions and get information directly from their young adult child more easily than public Facebook interaction; public posts inquiring about the young adult child's grades, lifestyles, problems, etc. would likely be seen as inappropriate or embarrassing. Private interaction would also likely better allow for the exchange of tangible assistance that is a part of overparenting. Private messages would likely be more appropriate to use when the young adult asks their parent for money, requires help making travel plans or with homework and would likely be a more effective channel for the parent to engage in the affect management that is a part of overparenting. Given young persons' use of terms such as 'creeping' and 'facestalking' to indicate their parent is monitoring them via Facebook (Jackson, 2011, p. 42), it could also be the case that the young adult child assumes the parent is engaging in more surveillance via public information on Facebook the more private Facebook interaction they have with their parent.

Hypothesis three stated that young adults' perceptions of their parents' relational maintenance via ICTs would positively predict their reported relatedness needs fulfillment. Research question one examined how young adults' perceptions of overparenting were associated with their reported relationship satisfaction. Research question two examined how young adults' perceptions of overparenting via ICTs would be associated with their reported relatedness need fulfillment. Hypothesis six stated that young adults' perceptions of their parents' relational maintenance via ICTs would be positively associated with their perceptions of

overparenting via ICTs. As these results are for the same sample as the public Facebook model and lead to the same conclusions, readers are directed to that section's discussion of the direct effect results for further analysis.

Indirect effects for private Facebook model. Hypothesis four posited that there would be a positive, indirect effect of parent-young adult child private Facebook use on young adults' reported relationship satisfaction with their parents through their increased perceptions of parents' relational maintenance via ICTs and reported increase in relatedness needs fulfillment. The hypothesized indirect effect was non-significant as private Facebook interaction was not significantly associated with perceptions of parents' relational maintenance. The remainder of the hypothesized causal chain was also non-significant as relatedness needs fulfillment did not mediate the relationship between perceptions of relational maintenance and relationship satisfaction. It should be noted that the relationship came close to significance (p = .06, CI: -.01, .43), so future studies should reexamine this indirect effect with a sample size that would provide enough power to capture a small to moderate effect size. However, even with more power, any such studies may still not find a significant indirect effect because relatedness needs fulfillment may not explain this relationship, as was the case for the voice calls model. Some studies (e.g., Canary & Stafford, 1992) have found that relational maintenance is associated with the equitableness of the relationship. Other studies have found that equity, in turn, predicts relationship satisfaction (e.g., Van Yperen & Buunk, 1990). Therefore, future studies could examine equity as a mediator in the relationship between perceptions of parents' relational maintenance and young adults' reported relationship satisfaction. Another possibility is that these variables operate independently rather than collectively, as the direct effects for the final three variables in the chain were significant: increased perceptions of parents' relational maintenance

were associated with increased relatedness needs fulfillment, which in turn was associated with increased reported relationship satisfaction.

Research question three examined an indirect effect of parent-young adult child private Facebook use on young adults' reported relationship satisfaction with their parents through their perceptions of overparenting via ICTs and reported relatedness needs fulfillment. The indirect effect was non-significant as perceptions of overparenting were not associated with reported relatedness needs. This result may relate to the fact that the overparenting behavior of risk aversion strongly contributed to the overparenting construct in this model. In the voice calls model, affect management and tangible assistance strongly contributed. Therefore, perceptions of parents' trying to protect their children may have less influence on reported relatedness needs fulfillment than emotional and tangible support.

Scholarly Implications

One of the consistent findings in this study was the strong relationship between perceptions of overparenting and perceptions of parents' relational maintenance in this sample of young adults who reported at least some overparenting occurring. In the voice calls and text messaging samples, multicollinearity and the bivariate correlations provided evidence of this. In the Facebook sample, relatively high correlations indicated this. This finding suggests that overparented young adults may not be able to differentiate between parental behaviors that are intended to sustain the relationship and parental behaviors that represent age-inappropriate helping. As mentioned previously, communication patterns within the family may drive both of these behaviors, as research has found perceptions of overparenting to be associated with the conformity orientation family communication pattern (Odenweller et al., 2014) and relational maintenance to be associated with the conformity orientation family communication pattern

(Ledbetter, 2009). Therefore, overparented young adults may not be able to distinguish between these two variables because they simply view them both as part of a larger pattern of communication by their parent.

Young adults' perceptions of overparenting and perceptions of parents' relational maintenance were more highly correlated when the young adult and parent were interacting through voice calls or text messages. It may be difficult to determine whether a parent is merely being positive and interested in the young adult's life or whether they are trying to get information from the young adult in order to minimize risk and engage in proactive problem-solving. These concepts were somewhat more distinguishable when Facebook was being utilized. Most young adults who utilize Facebook likely realize that parents can utilize Facebook for overparenting because parents can obtain information about the young adults' activities without needing to ask. Therefore, if the parent asks about the young adult's friends, it may be taken as the social network form of relational maintenance rather than the monitoring that relates to overparenting. Another possible reason for the Facebook findings being somewhat different from the voice calls and text messaging findings may be the samples. The Facebook sample saw their parent less frequently and lived much further away from their parents' homes when at school. Therefore, perhaps relational maintenance and overparenting are more distinguishable concepts because participants in the Facebook sample have a better idea which issues parents can reasonably intervene in despite the distance, time zone difference, etc. and therefore can more easily identify behaviors that are relational maintenance compared to young adults' whose parents live closer and potentially have more options and easier means of intervening.

The results also indicated that perceptions of overparenting were positively associated with relatedness needs fulfillment. These results contradict Schiffrin et al. (2014) who found that

overparenting was negatively associated with relatedness needs fulfilment. However, these results were not altogether surprising, given that overparenting has been conceptualized to involve warmth and support in addition to age-inappropriate helping behaviors (Padilla-Walker & Nelson, 2012). The different measures utilized to assess overparenting may explain the difference between the present study and that of Schiffrin et al. (2014). The overparenting measure created by Schiffrin et al. (2014) primarily focused on parental monitoring behaviors while the measure utilized in the present study also included factors that may address the warmth and support aspect, such as affect management and tangible assistance. In addition, average overparenting was relatively high in this study and relatively low in the Schiffrin et al. (2014) study. It seems likely that high levels of overparenting that involve helping behaviors and support would do more to foster relatedness needs, such as a person's sense of being liked and cared for, than would low levels of overparenting that primarily involve surveillance.

The positive association between perceptions of overparenting and young adults' reported relationship satisfaction was another interesting finding. Prior research has suggested that overparenting may have harmful effects on relationships. For example, Segrin et al. (2012) found that overparenting was associated with more problematic parent-child communication and reduced family satisfaction. It may be the case that overparenting reduces family satisfaction because of difficulties it causes with other family members (perhaps sibling jealousy) but increases satisfaction with the overinvolved parent. Cramer (2006) found that support that made a romantic partner feel cared for was associated with increased relationship satisfaction. Parents' behaviors such as affect management, tangible assistance, and anticipatory problem-solving may increase such feelings among young adults, therefore leading to increased relationship satisfaction. Future studies should further examine this result. For example, other studies could

further this research by examining the influence of overparenting on other indicators of relationship quality (e.g., closeness, liking).

Theoretical Implications

This study attempted to extend Ryan and Deci's (2000a) BPNT. First, this study examined whether perceptions of relational maintenance are positively associated with relatedness needs fulfillment, which does not appear to have been studied previously. In addition, previous studies using BPNT had examined general satisfaction with relationships (e.g., Mellor et al., 2008) while this study examined how relatedness needs fulfillment influences satisfaction with a particular relational partner.

The results generally supported BPNT. BPNT (Ryan & Deci, 2000a) posits that fulfillment of innate needs, including relatedness needs, promotes positive outcomes, such as increased life satisfaction. This study examined relationship satisfaction with the parent as the positive outcome, because prior research has found a positive relationship between life satisfaction and relationship satisfaction (Rochlen, McKelley, Suizzo, & Scaringi, 2008) and because prior research has found that satisfaction of relatedness needs is associated with satisfaction with personal relationships (Mellor et al., 2008). In the samples that reported on Facebook and text messaging interactions, increased relatedness needs fulfillment was positively associated with young adults' relationship satisfaction with their parent, supporting the BPNT's prediction. However, across all three samples and all four models, relatedness needs fulfillment did not explain the relationship between factors that increased relatedness needs fulfillment (perceptions of overparenting or relational maintenance) and the positive outcome of relationship satisfaction. In the Facebook models as well as the voice calls model, the factor that increased needs fulfillment (perceptions of overparenting or relational maintenance) were directly

associated with reported relationship satisfaction. Therefore, future research should examine other theories or variables that would help explain this relationship, such as Equity Theory. Equity Theory (Hatfield, Traupmann, Sprecher, Utne, & Hay, 1985), which has a long history of being studied in the context of relational maintenance, may explain the positive association between perceptions of overparenting and perceptions of parents' relational maintenance and relationship satisfaction. Perceptions of the affect management and tangible assistance components of overparenting as well as the relational maintenance behaviors would likely increase young adults' sense that they are over-benefited in their relationship with their parent, which could then lead to increased relationship satisfaction. In line with this possibility, Vogl-Bauer et al. (1999) found that over-benefited young adults reported greater family satisfaction than those in under-benefited relationships.

The results of this study provide more support for the Cues-Filtered-In Perspective (Walther & Parks, 2002) than the Cues-Filtered-Out Perspective (e.g., Kiesler, 1986). The Cues-Filtered-Out Perspective (e.g., Kiesler, 1986) claimed that complex communication would be difficult (some proponents argued impossible) in mediated contexts due to the lack of social cues. However, the results of this study suggest that complex communication is likely occurring through voice calls, text messaging, and Facebook, as students perceived overparenting and relational maintenance as occurring through these channels. Prior research in the area of relational maintenance has found a moderate correlation between one person's perceptions of their partner's relational maintenance and the partner's self-reported relational maintenance (Canary & Stafford, 1992), so it is likely the perceptions of the behaviors examined in this study are based, in part, on the parents' actual communicative behaviors. This suggests that parents are

able to engage in complex communication via ICTs typically considered lean, such as text messaging.

The results for the direct effects in particular provide support for the Cues-Filtered-In Perspective (Walther & Parks, 2002), which states that mediated communication and face-to-face communication are more similar than different because humans are motivated to use ICTs and therefore adapt. In the present study, perceptions of parents' relational maintenance performed through Facebook was positively associated with young adults' relationship satisfaction. In offline contexts, Canary and Stafford (1992) similarly found a positive relationship between perceptions of a partner's relational maintenance and reported relationship satisfaction. In addition, the study by Mellor et al. (2008) found that fulfillment of belongingness (relatedness) needs and satisfaction with personal relationships were positively associated; the present study found a positive relationship between relatedness needs fulfillment and relationship satisfaction for the samples that reported on use of Facebook and text messaging. Given that voice calls are more similar to face-to-face communication than text messages or use of Facebook (when it does not involve video calls), the findings for the voice calls group seems like less of a rebuke of the Cues-Filtered-In-Perspective and more so an indication of a unique process for voice calls. Research by Seltzer et al. (2011) found that young women who were communicating with their parent via phone during a stressful event released the bonding hormone oxytocin. Therefore, any unconscious processing about whether relatedness needs are being met may be bypassed by the more primal hormonal response. Performance of the helping behaviors that are a part of overparenting may also stimulate release of oxytocin, which could then positively influence relationship satisfaction when communicating via voice calls. Future

research could examine whether perceptions of overparenting are associated with the production of oxytocin among young adults.

Practical Implications

The results for the Facebook sample reaffirm the important role relational maintenance behaviors play in relational outcomes. Based on these results, parents seeking to improve their relationship with their young adult child should engage in relational maintenance behaviors when communicating via Facebook because doing so would likely increase young adults' perceptions of these behaviors. However, these results also suggest that use of public Facebook interaction may harm parent-young adult child relationships, therefore parents should enact relational maintenance via private Facebook interaction. For example, a parent can send a positive, encouraging instant message to their young adult child or affirm their love for their child in such a message.

This study also found that perceptions of overparenting via voice calls positively influenced relationship satisfaction through relatedness need fulfillment. Further examination of the results, as mentioned previously, suggested that the greater amounts of available social cues available via voice calls may be useful to the parent when engaging in affect management; young adults who receive emotional support from their parent may then report more relationship satisfaction. However, parents should be cautioned against increasing overparenting behaviors in the hopes of increasing young adults' perceptions of it, given the deleterious outcomes it has been associated with, including ineffective coping, poorer decision-making, as well as higher levels of anxiety, stress, and depression (Luebbe et al., in press; Schiffrin et al., 2014; Segrin et al., 2013).

In the Facebook sample and the text messaging sample, reported relatedness needs fulfillment was positively associated with young adults' reported relationship satisfaction with their parent. This finding reaffirms the idea that factors outside a particular relationship can influence the outcomes of that relationship. For example, general life satisfaction has been found to influence persons' perceptions of their relationships (e.g., Rochlen et al., 2008). Fincham, Beach, Harold, & Osborne (1997) found that depression predicted men's marital satisfaction 18 months later. Therefore, lack of relatedness needs fulfillment is another possible area to explore if a relational partner, in this case a parent, feels like they are taking actions to promote positive relational outcomes but are not seeing those outcomes realized.

Finally, these results suggest that it is chiefly the perceptions of specific behaviors performed via ICTs, such as overparenting and parents' relational maintenance, that influence relational outcomes rather than the amount of technology use, especially when voice calls or Facebook are utilized to interact. Technology use itself was not positively associated with reported relationship satisfaction. Instead, in the Facebook models, perceptions of parents' relational maintenance were associated with reported relationship satisfaction. In the voice calls sample, it was only through increased perceptions of overparenting that use of voice calls influenced reported relationship satisfaction. Therefore, parents desiring to improve their relationship with their young adult child should focus on the communicative behaviors they are engaging in when communicating via ICTs as opposed to focusing on how frequently or how much they are interacting with their young adult child via ICTs.

Limitations and Future Directions

A key limitation of this study is the use of cross-sectional data to test the hypotheses and research questions. Analysis with longitudinal data would provide a better test of the causality

claims inherent in the model, as it could be determined if the variables do predict each other over time. In addition, duration of the effect of technology use could be better assessed (e.g., how long do the effects of voice call use on relationship satisfaction last). Such a study may also reduce error related to recall bias, depending on how it is executed.

The size of the samples may also have influenced these findings. Bias-corrected bootstrapping was utilized to examine the indirect effects because it has been found to provide the most power in various types of indirect effect analyses (Hayes, 2008). However, Fritz and MacKinnon (2007) found that sample sizes of 368-462 are necessary to have adequate power (.8) to find an indirect effect using bias-corrected bootstrapping for a one mediator model when either the parameter from variable A to variable B or variable B to variable C is small. This study examined models with two mediator variables; the results of the Facebook sample (107 participants) may have been different with a larger sample size. Future studies should attempt to rectify this limitation.

Another concern relates to the idea that many of today's relationships, including parent-young adult child relationships, are mixed-mode (Gentzler et al., 2011; Schon, 2014), meaning they are conducted through more than one ICT. Concerns about participant fatigue informed the decision to have participants report on use of only one ICT. Future studies should attempt to better understand how combinations of technology use affect these processes. For example, parents may increase their use of overparenting behaviors when interacting utilizing voice calls if they perceive their child is ignoring their warnings about risk through text messages.

Participants also primarily reported on a female parent. This was also the case in the Ramsey et al. (2013) and Gentzler et al. (2011) studies. Therefore, future studies should examine whether these processes work similarly among male parent-young adult child dyads. Schon

(2014), for example, found that fathers communicate with their young adult children less frequently via ICTs than mothers; the results of Hofer (2008) seem to support this idea as 26% of first-year college students and nearly 31% of second-year students reported desiring more contact with their fathers. There is also the perception that mothers are more likely to be overparenters than are fathers (Schiffrin et al., 2014), and recent research indicates that young adults perceive more overparenting from their mother than their father (Kelly et al., 2017).

Multicollinearity prevented the investigation of some of the hypotheses and research questions proposed in this study. For example, hypothesis two posited that parent-young adult child use of ICTs would positively predict young adults' perceptions of their parents' relational maintenance via ICTs. Hypothesis three stated that young adults' perceptions of their parents' relational maintenance via ICTs would positively predict their reported relatedness needs fulfillment. Hypothesis four posited that there would be a positive, indirect effect of parent-adult child ICT use on young adults' reported relationship satisfaction with their parents through their increased perceptions of parents' relational maintenance via ICTs and reported increase in relatedness needs fulfillment. None of these hypotheses were examined in the voice calls or text messaging samples due to multicollinearity between relational maintenance and overparenting. Future studies should attempt to determine whether relational maintenance and overparenting are distinguishable concepts among other samples of young adults. If they are not, this may suggest that overparenting has become such the norm that young adults do not see the helping behaviors as age-inappropriate.

Finally, a note should be made regarding generalizability. This study examined a sample of young adults who perceived at least some overparenting occurring in the relationship with their parent. Therefore, the results regarding the positive effects of perceptions of parents'

relational maintenance (e.g., positively influencing relatedness needs fulfillment and reported relationship satisfaction) may not apply to young adults who are not overparented. Future studies should compare these effects among overparented and non-overparented young adults. In addition, the majority of participants were Caucasian, especially in the voice calls and text messaging groups. Research by Racz, Johnson, Bradshaw, and Cheng (2017) found that black young adults prefer text messaging with their parents over other channels, so perhaps parent-young adult child use of text messaging would have effects in a sample with a different ethnic makeup.

Conclusion

This study has contributed to the literature on how ICTs affect close relationships by examining two mediators (i.e., parents' relational maintenance and overparenting) of the relationship between ICT use and relationship satisfaction in parent-young adult child relationships. Results did not support the predicted indirect effects models; instead, perceptions of specific behaviors enacted via ICTs, such as overparenting and parents' relational maintenance directly influenced young adults' relationship satisfaction with their parents, except for the text messaging sample. The results for the text messaging sample add to a body of research suggesting that text messaging has little influence on relational outcomes for young adults. Overall, these results reaffirm the importance of relational maintenance behaviors in close relationships and support other recent research (Kelly et al., 2017) that finds that perceptions of overparenting positively influence parent-young adult relationships.

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Appendix A: Information Statement

Information Statement

The Department of Communication Studies at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

We are conducting this study to better understand the role technology use plays in parent-young adult child relationships. This will entail completion of a survey. Your participation is expected to take approximately 30 minutes to complete. The content of the survey should cause no more discomfort than you would experience in your everyday life, and there are no expected risks. COMS 130 students will receive 5 points of course credit for completion of the survey and 15 points if their parent also completes the study. Upper-level COMS students will receive extra credit as specified by their instructor for their completion and their parents' completion of a survey. Participants can withdraw at any time without penalty.

Although participation may not benefit you directly, we believe that the information obtained from this study will help us gain a better understanding of factors that influence relationship quality in parent-young adult child relationships. Your participation is solicited, although strictly voluntary. Your name will not be associated in any way with the research findings. Your identifiable information will not be shared unless (a) it is required by law or university policy, or (b) you give written permission. It is possible, however, with internet communications, that through intent or accident someone other than the intended recipient may see your response. If you would like additional information concerning this study before or after it is completed, please feel free to contact us by phone or mail.

Completion of the survey indicates your willingness to take part in this study and that you are at least 18 years old. If you have any additional questions about your rights as a research participant, you may call (785) 864-7429 or write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, email irb@ku.edu.

Sincerely,

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Appendix B: Survey
Technology Use
Adapted from Ledbetter and Kuznekoff (2012)

Voice Calls Sample:
Please answer the below questions keeping in mind the parent you were told to focus on at beginning of the study. Note that voice calls refer both to those completed via cellular phone and those completed via landline phone or a combination of the two. Do not include video calls (Skype/Facetime) in your responses.

Compared to other communication technologies (examples include but are not limited to text messaging, email, or social media posts) you utilize to interact, you and your parent utilize voice calls:

- ❍ Much less than other channels
- ❍ Somewhat less than other channels
- ❍ About the same as other channels
- ❍ Somewhat more than other channels
- ❍ Much more than other channels

How frequently do you and your parent interact via voice calls?

- ❍ Never
- ❍ Very rarely
- ❍ Rarely
- ❍ Sometimes
- ❍ Often
- ❍ Very often

Voice calls are an important means for you and your parent to keep in contact with each other

- ❍ strongly disagree
- ❍ disagree
- ❍ neither agree nor disagree
- ❍ agree
- ❍ strongly agree

Without voice calls, you and your parent's communication would be drastically different

- ❍ strongly disagree
- ❍ disagree
- ❍ neither agree nor disagree
- ❍ agree
- ❍ strongly agree

Text messaging Group:

Instructions: Please answer the below questions keeping in mind the parent you were told to focus on at the beginning of the study. Note that text messages refer to those sent/received both through a phone's built-in text messaging software and other apps such as Snapchat, WhatsApp, etc.

Compared to other communication technologies (examples include but are not limited to phone calls, video calls, or social media posts) you utilize to interact, you and your parent utilize text messaging:

- ❍ Much less than other channels
- ❍ Somewhat less than other channels
- ❍ About the same as other channels
- ❍ Somewhat more than other channels
- ❍ Much more than other channels

How frequently do you and your parent interact via text message?

- ❍ Never
- ❍ Very rarely
- ❍ Rarely
- ❍ Sometimes
- ❍ Often
- ❍ Very often

Text messaging is an important means for you and your parent to keep in contact with each other

- ❍ strongly disagree
- ❍ disagree
- ❍ neither agree nor disagree
- ❍ agree
- ❍ strongly agree

Without text messaging, you and your parent's communication would be drastically different

- ❍ strongly disagree
- ❍ disagree
- ❍ neither agree nor disagree
- ❍ agree
- ❍ strongly agree

Facebook Group

We would now like to understand more about whether use of Facebook in your relationship is more public in nature or more private in nature. Although some of these questions will look similar, the part in the italics will be different and should be noted as you answer the question.

How frequently do you and your parent communicate using Facebook messages that others can see?

- ❍ Never
- ❍ Very Rarely
- ❍ Rarely
- ❍ Sometimes
- ❍ Often
- ❍ Very often

How frequently do you and your parent communicate using Facebook messages that are just between the two of you?

- ❍ Never
- ❍ Very Rarely
- ❍ Rarely
- ❍ Sometimes
- ❍ Often
- ❍ Very often

Facebook messages that are public are an important way for you and your parent to keep in contact with each other

- ❍ strongly disagree
- ❍ disagree
- ❍ neither agree nor disagree
- ❍ agree
- ❍ strongly agree

Facebook messages that are just between the two of you are an important way for you and your parent to keep in contact with each other

- ❍ strongly disagree
- ❍ disagree
- ❍ neither agree nor disagree
- ❍ agree
- ❍ strongly agree

Without use of Facebook messages that are public, you and your parent's communication would be drastically different

- ❍ strongly disagree
- ❍ disagree
- ❍ neither agree nor disagree
- ❍ agree
- ❍ strongly agree

Without use of Facebook messages that are just between the two of you, you and your parent's communication would be drastically different

- ❍ strongly disagree
- ❍ disagree
- ❍ neither agree nor disagree
- ❍ agree
- ❍ strongly agree

Perceptions Parents' Relational Maintenance
Stafford and Canary (1991)

Instructions: Answer the following questions thinking only of behaviors that your parent engages in through [assigned channel].

1 = strongly disagree
2 = disagree
3 = somewhat disagree
4 = neither agree nor disagree
5 = somewhat agree
6 = agree
7 = strongly agree

1. When communicating using this channel, my parent tries to build up my self-esteem, giving me compliments, etc.
2. When communicating using this channel, my parent does not criticize me.
3. When communicating using this channel, my parent is very nice, courteous, and polite.
4. When communicating using this channel, my parent acts cheerful and positive with me
5. When communicating using this channel, my parent is patient and forgiving of me.
6. When communicating using this channel, my parent presents themself as cheerful and optimistic.
7. When communicating using this channel, my parent tells me how they feel about our relationship
8. When communicating using this channel, my parent discusses the quality of our relationship.
9. When communicating using this channel, my parent discloses what they need or want from our relationship
10. When communicating using this channel, my parent talks about our relationship
11. When communicating using this channel, my parent stresses their commitment to me
12. When communicating using this channel, my parent implies that our relationship has a future
13. When communicating using this channel, my parent shows their love for me
14. When communicating using this channel, my parent discusses people we both know
15. When communicating using this channel, my parent shows that they are willing to do things with my friends or romantic partner
16. When communicating using this channel, my parent mentions including my friends or romantic partner in our activities
17. When communicating using this channel, my parent helps equally with tasks that need to be done
18. When communicating using this channel, my parent takes their share of the joint responsibilities that face us
19. When communicating using this channel, my parent does their fair share of the work we have to do
20. When communicating using this channel, my parent does not shirk their duties

Overparenting Scale
Segrin et al. (2012)

Instructions: Please answer the below questions keeping in mind the parent you were told to focus on at the beginning of the study.

1. When using this channel, if this parent sees that I am about to have some difficulty, they will intervene to take care of the situation before things get difficult for me.
2. If this parent sees that I am feeling badly they try to cheer me up using this channel
3. Using this channel, this parent does what they can to protect me from risky situations
4. Using this channel, this parent does what they can to keep me out of difficult situations
5. This parent helps me figure out my transportation needs (e.g., providing a car, buying a plane ticket, giving rides) using this channel
6. When using this channel, this parent lets me figure out how to do things on my own.
7. When using this channel, this parent lets me solve most problems on my own.
8. When using this channel, this parent lets me work out the problems that I encounter on my own.
9. This parent says or does things to cheer me up using this channel
10. This parent sees to it that my financial needs are taken care of using this channel
11. Using this channel, this parent tries to anticipate things that will prevent me from reaching my goals and acts to eliminate them before they become a problem.
12. This parent tries to eliminate potential hazards from my life before I encounter them using this channel
13. Using this channel, this parent tries to stay one step ahead of what I'm doing so that they can help me minimize any obstacles that could be encountered.
14. When I get anxious this parent will say things to calm me down using this channel
15. When using this channel, this parent indicates they will provide help with basic necessities such as food and clothing
16. When using this channel, this parent lets me take responsibility for my happiness in life
17. When times get tough for me I talk to this parent about trying to look on the bright side of things using this channel
18. When using this channel, this parent urges me to be careful and not take too many risks in life.

Basic Needs Satisfaction in General Scale
Johnston & Finney (2010)

Instructions: Please indicate your agreement with each statement below.

1 = strongly disagree
2 = disagree
3 = somewhat disagree
4 = neither agree nor disagree
5 = somewhat agree
6 = agree
7 = strongly agree

Relatedness items

1. I really like the people I interact with
2. I get along with people I come into contact with
3. I consider the people I regularly interact with to be my friends
4. People in my life care about me
5. People are generally pretty friendly towards me

Relationship Satisfaction Scale
Beatty and Dobos (1992)

Directions: For this question, think about the parent you were asked to focus on. Slide the marker under the number that best reflects how you feel about your relationship with this parent.

1.	Unsatisfying	1	2	3	4	5	6	7 Satisfying
2.	Unfulfilling	1	2	3	4	5	6	7 Fulfilling
3.	Negative	1	2	3	4	5	6	7 Positive
4.	Punishing	1	2	3	4	5	6	7 Rewarding
5.	Bad	1	2	3	4	5	6	7 Good

Demographic Questions

Directions: For the below questions, select the option that best answers the question.

Are you 18 years of age or older?
- ❍ Yes
- ❍ No

Do you have at least one parent with whom you communicate at least once per week using Facebook, text messaging, or voice calls?
- ❍ Yes
- ❍ No

What is your gender?
- ❍ Male
- ❍ Female
- ❍ Other

What is your age? The corresponding number will appear to the right.
_____ Age

What is your race?
- ❍ White/Caucasian
- ❍ African American/Black
- ❍ Hispanic
- ❍ Asian
- ❍ Native American
- ❍ Pacific Islander
- ❍ Multi-racial
- ❍ Other

What is your current romantic relationship status?
- ❍ Single
- ❍ In a casual dating relationship
- ❍ In a serious dating relationship
- ❍ Engaged
- ❍ Married/part of a civil union
- ❍ Separated
- ❍ Divorced
- ❍ Widowed
- ❍ Other

When school is in session, you live:
- ❍ In the dorms, a scholarship hall, or other university-governed student housing
- ❍ With a parent(s)
- ❍ With relatives or family friends
- ❍ Off campus by yourself
- ❍ Off campus with roommates or a significant other
- ❍ Other _____

Using numbers (for example, 54) rather than written text, type in approximately how far from home, in miles, you live when you are at school. If you live with your parent(s), type 0.

Think about your parent(s). Specifically, think of any parent who you communicate with at least once a week using voice calls, text messages, or Facebook messages/posts. Below, indicate how many of your parents this is true for.
- ❍ 2 or more
- ❍ 1
- ❍ 0. My parent and I communicate using communication technology but not at least once a week
- ❍ 0. I have no parent with whom I communicate with using communication technologies.

This parent is your:
- ❍ Biological parent
- ❍ Step-parent
- ❍ Legally adoptive parent
- ❍ Foster parent
- ❍ Relative who oversaw your care
- ❍ Other _____

This parent identifies as:
- ❍ Male
- ❍ Female
- ❍ Other

Select the current age of this parent. If you are unsure, make a guess. The corresponding number will appear to the right.
_____ Age

Approximately how frequently do you see this parent face-to-face?
- ❍ Daily
- ❍ Weekly
- ❍ Monthly
- ❍ 9-11 times per year
- ❍ 5-8 times per year
- ❍ 1- 4 times per year
- ❍ Less than yearly

What is this parent's race?
- ❍ White/Caucasian
- ❍ African American/Black
- ❍ Hispanic
- ❍ Asian
- ❍ Native American
- ❍ Pacific Islander
- ❍ Multi-racial
- ❍ Other

Which of the below best describes your current family structure (who leads the family)?
- ❍ Single-parent family
- ❍ Two-parent family, with parents who live separately (possibly due to divorce)
- ❍ Two-parent family with a male and female partner who reside together
- ❍ Two-parent family with same-sex partners who reside together
- ❍ Blended or step-family
- ❍ Family with two or more leaders who are not romantically involved (for example, grandmother and mother lead or aunt and father lead)
- ❍ Other _____

How many children, including yourself, are in your family? The corresponding number will appear to the right
_____ Children

Do you and your parent currently utilize Facebook at least once a week to communicate with each other?
- ❍ Yes
- ❍ No

Please check the box next to each communication technology that you and your parent currently utilize at least once a week to communicate with each other.

- ❑ Text messages (including those sent through an app)
- ❑ Voice calls (cellular or landline)

Appendix C: Tables and Figures

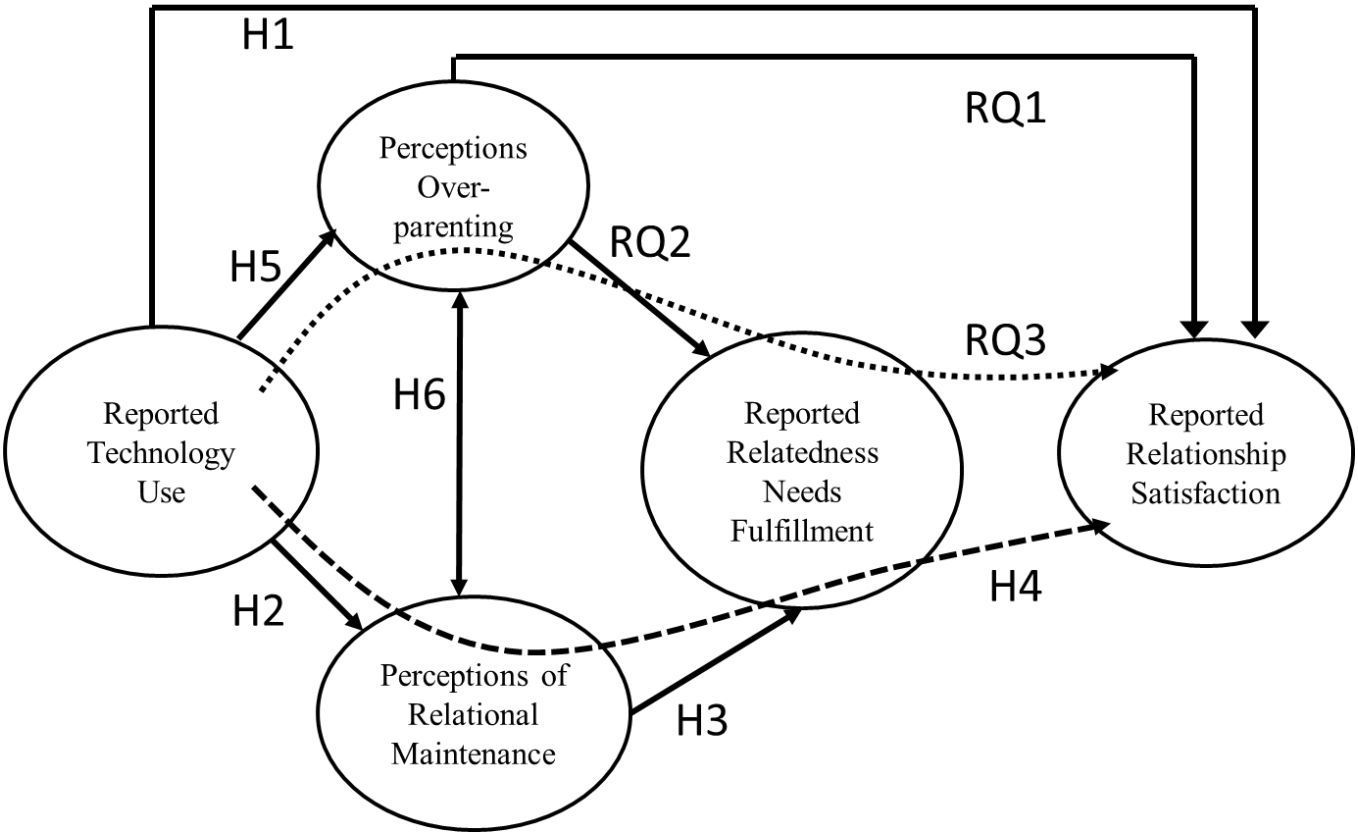

Figure 1. Study hypotheses and research questions.

Table 1
Reliabilities for Key Study Variables by Technology Use Group

Variable	Voice Calls	Text Messaging	Facebook	PuFB	PrFB
TU	.72	.69		.55	.72
RMP	.83	.79	.87		
RMO	.89	.78	.80		
RMA	.66	.64	.55		
RMSN	.72	.62	.72		
RMST	.78	.74	.73		
OPPS	.73	.63	.71		
OPAM	.80	.75	.66		
OPPD	.80	.67	.71		
OPTA	.65	.64	.74		
OPRA	.70	.62	.64		
NFR	.78	.80	.79		
RS	.92	.92	.94		

Note. PuFB = Parent-Young Adult Child Public Facebook Use, PrFB = Parent-Young Adult Child Private Facebook Use, TU = Parent-Young Adult Child Technology Use, RMP = Relational Maintenance Positivity; RMO = Relational Maintenance Openness; RMA= Relational Maintenance Assurances; RMSN = Relational Maintenance Social Network; RMST = Relational Maintenance Shared Tasks; OPPS = Overparenting Anticipatory Problem-Solving; OPAM = Overparenting Advice and Affect Management, OPPD = Overparenting Parent Direction, OPTA = Overparenting Tangible Assistance, OPRA = Overparenting Risk Aversion, RNF = Relatedness Needs Fulfillment; RS= Relationship Satisfaction.

Table 2
Results of Principle Component Analysis for Factors Contributing to Relatedness Needs Fulfillment in the Voice Calls Model

	Eigenvectors		
Factors	Constant	PRM	OP
1	.51	.69	.00
2	.49	.31	1.00

Note. PRM = Perceptions of Parents' Relational Maintenance, OP = Perceptions of Overparenting.

Table 3
Results of Principle Component Analysis for Factors Contributing to Relatedness Needs Fulfillment in the Text Messaging Model

	Eigenvectors		
Factors	Constant	PRM	OP
1	.34	.84	.03
2	.66	.16	.97

Note. PRM = Perceptions of Parents' Relational Maintenance, OP = Perceptions of Overparenting.

Table 4

Zero-Order Correlations, Means, and Standard Deviations for Key Variables in Voice Calls Model

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. VCU	---												
2. RMP	.09	---											
3. RMO	.26	.51	---										
4. RMA	.15	.59	.68	---									
5. RMSN	.18	.48	.51	.44	---								
6. RMST	.15	.65	.45	.57	.48	---							
7. OPPS	.20	.13	.25	.10	.20	.16	---						
8. OPAM	.19	.59	.47	.44	.47	.48	.23	---					
9. OPPD	.06	.42	.34	.30	.41	.43	.12	.41	---				
10. OPTA	.15	.46	.24	.34	.33	.51	.30	.41	.31	---			
11. OPRA	.22	.22	.29	.20	.29	.30	.65	.38	.23	.38	---		
12. RNF	.12	.31	.17	.21	.30	.35	.08	.26	.28	.27	.22	---	
13. RS	.05	.48	.29	.34	.32	.37	.10	.39	.26	.15	.14	.14	---
M	4.72	5.85	4.57	5.79	5.61	5.75	3.47	4.24	3.94	4.23	3.81	6.05	6.52
SD	.96	.80	1.42	1.03	1.09	.91	.85	.60	.60	.61	.62	.61	.74

Note. All correlations above .13 are significant at the .05 level and above .19 are significant at the .01 level. VCU = Parent-Young Adult Child Voice Call Use; RMP = Relational Maintenance Positivity; RMO = Relational Maintenance Openness; RMA= Relational Maintenance Assurances; RMSN = Relational Maintenance Social Network; RMST = Relational Maintenance Shared Tasks; OPPS = Overparenting Anticipatory Problem-Solving; OPAM = Overparenting Advice and Affect Management, OPPD = Overparenting Parent Direction, OPTA = Overparenting Tangible Assistance, OPRA = Overparenting Risk Aversion, RNF = Relatedness Needs Fulfillment; RS= Relationship Satisfaction.

Table 5

Zero-Order Correlations, Means, and Standard Deviations for Key Variables for Text-Messaging Model

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. TMU	---												
2. RMP	.12	---											
3. RMO	.19	.36	---										
4. RMA	.24	.58	.57	---									
5. RMSN	.11	.44	.47	.48	---								
6. RMST	.13	.60	.38	.56	.48	---							
7. OPPS	-.08	.17	.23	.16	.06	.12	---						
8. OPAM	.09	.60	.38	.51	.43	.50	.19	---					
9. OPPD	.19	.13	.22	.27	.17	.20	.04	.20	---				
10. OPTA	.04	.35	.15	.26	.27	.36	.19	.31	.14	---			
11. OPRA	-.02	.19	.17	.20	.11	.23	.57	.25	.15	.35	---		
12. RNF	.06	.30	.08	.23	.19	.27	.02	.24	.06	.19	.01	---	
13. RS	.01	-.07	-.08	-.11	-.02	-.04	-.11	-.02	.04	-.03	-.05	.03	---
M	4.69	5.61	4.53	5.60	5.26	5.53	3.42	3.94	3.88	4.08	3.68	5.96	6.35
SD	.94	.79	1.21	.92	1.04	.85	.68	.61	.51	.62	.57	.68	.85

Note. All correlations above .13 are significant at the .05 level and above .19 are significant at the .01 level. TMU = Parent-Young Adult Child Text-Messaging Use; RMP = Relational Maintenance Positivity; RMO = Relational Maintenance Openness; RMA= Relational Maintenance Assurances; RMSN = Relational Maintenance Social Network; RMST = Relational Maintenance Shared Tasks; OPPS = Overparenting Anticipatory Problem-Solving; OPAM = Overparenting Advice and Affect Management, OPPD = Overparenting Parent Direction, OPTA = Overparenting Tangible Assistance, OPRA = Overparenting Risk Aversion, RNF = Relatedness Needs Fulfillment; RS= Relationship Satisfaction.

Table 6

Zero-Order Correlations, Means, and Standard Deviations for Key Variables in Public Facebook Model

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. PuFB	---												
2. RMP	-.10	---											
3. RMO	.14	.52	---										
4. RMA	.14	.73	.62	---									
5. RMSN	.06	.61	.60	.58	---								
6. RMST	.11	.56	.46	.58	.49	---							
7. OPPS	.10	.26	.36	.26	.41	.37	---						
8. OPAM	-.02	.57	.35	.41	.40	.40	.41	---					
9. OPPD	.06	.36	.30	.35	.31	.26	.41	.49	---				
10. OPTA	-.03	.11	.13	.07	.14	.15	.44	.40	-.39	---			
11. OPRA	.01	.47	.34	.40	.45	.31	.69	.60	-.53	.43	---		
12. RNF	-.23	.44	.25	.37	.27	.36	.18	.31	-.21	.12	.28	---	
13. RS	-.20	.48	.40	.32	.34	.36	.30	.33	-.27	.03	.32	.46	---
M	2.63	5.58	4.61	5.37	5.02	5.12	3.52	3.81	2.31	3.49	3.70	5.86	6.23
SD	1.19	1.02	1.31	.99	1.13	1.02	.67	.61	.62	.78	.56	.72	1.00

Note. All correlations above .19 are significant at the .05 level and above .25 are significant at the .01 level. PuFB = Parent-Young Adult Child Public Facebook Use; RMP = Relational Maintenance Positivity; RMO = Relational Maintenance Openness; RMA= Relational Maintenance Assurances; RMSN = Relational Maintenance Social Network; RMST = Relational Maintenance Shared Tasks; OPPS = Overparenting Anticipatory Problem-Solving; OPAM = Overparenting Advice and Affect Management, OPPD = Overparenting Parent Direction, OPTA = Overparenting Tangible Assistance, OPRA = Overparenting Risk Aversion, RNF = Relatedness Needs Fulfillment; RS= Relationship Satisfaction.

Table 7

Zero-Order Correlations Means, and Standard Deviations for Key Variables in Private Facebook Model

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. PRFBU	---												
2. RMP	.02	---											
3. RMO	-.11	.52	---										
4. RMA	-.06	.73	.62	---									
5. RMSN	-.15	.61	.60	.58	---								
6. RMST	.11	.56	.46	.58	.49	---							
7. OPPS	.03	.26	.36	.26	.41	.37	---						
8. OPAM	.19	.57	.35	.41	.40	.40	.41	---					
9. OPPD	.17	.36	.30	.35	.31	.26	.41	.49	---				
10. OPTA	.22	.11	.13	.07	.14	.15	.44	.40	-.39	---			
11. OPRA	.10	.47	.34	.40	.45	.31	.69	.60	-.53	.43	---		
12. RNF	-.12	.44	.25	.37	.27	.36	.18	.31	-.21	.12	.28	---	
13. RS	-.09	.48	.40	.32	.34	.36	.30	.33	-.27	.03	.32	.46	---
M	3.09	5.58	4.61	5.37	5.02	5.12	3.52	3.81	2.31	3.49	3.70	5.86	6.23
SD	1.43	1.02	1.31	.99	1.13	1.02	.67	.61	.62	.78	.56	.72	1.00

Note. All correlations above .19 are significant at the .05 level and above .25 are significant at the .01 level. PRFBU Parent-Young Adult Child Private Facebook Use; RMP = Relational Maintenance Positivity; RMO = Relational Maintenance Openness; RMA= Relational Maintenance Assurances; RMSN = Relational Maintenance Social Network; RMST = Relational Maintenance Shared Tasks; OPPS = Overparenting Anticipatory Problem-Solving; OPAM = Overparenting Advice and Affect Management, OPPD = Overparenting Parent Direction, OPTA = Overparenting Tangible Assistance, OPRA = Overparenting Risk Aversion, RNF = Relatedness Needs Fulfillment; RS= Relationship Satisfaction.

Table 8
Standardized Factor Loadings, Residuals, and R^2 Values for Voice Calls Model

Indicator	Loading(SE)	Theta	R^2
Parent-Young Adult Child Voice Calls Use			
1	.61(.06)	.63	.37
2	.78(.05)	.39	.61
3	.77(.05)	.40	.60
4	.56(.07)	.69	.31
Perceptions of Overparenting			
PS	.36(.08)	.87	.13
AM	.71(.07)	.50	.51
PD	.52(.07)	.73	.27
TA	.60(.07)	.64	.36
RA	.55(.07)	.70	.30
Reported Relatedness Needs Fulfillment			
1	.81(.05)	.34	.66
2	.53(.06)	.72	.28
3	.64(.06)	.59	.42
4	.62(.06)	.62	.38
Reported Relationship Satisfaction			
1	.88(.02)	.23	.77
2	.78(.03)	.40	.60
3	.86(.03)	.26	.75
4	.81(.03)	.34	.66

Note. P = Relational Maintenance Positivity; O = Relational Maintenance Openness; A= Relational Maintenance Assurances; SN = Relational Maintenance Social Network; ST = Relational Maintenance Shared Tasks; PS = Overparenting Anticipatory Problem-Solving; AM = Overparenting Advice and Affect Management, PD = Overparenting Parent Direction, TA = Overparenting Tangible Assistance, RA = Overparenting Risk Aversion.

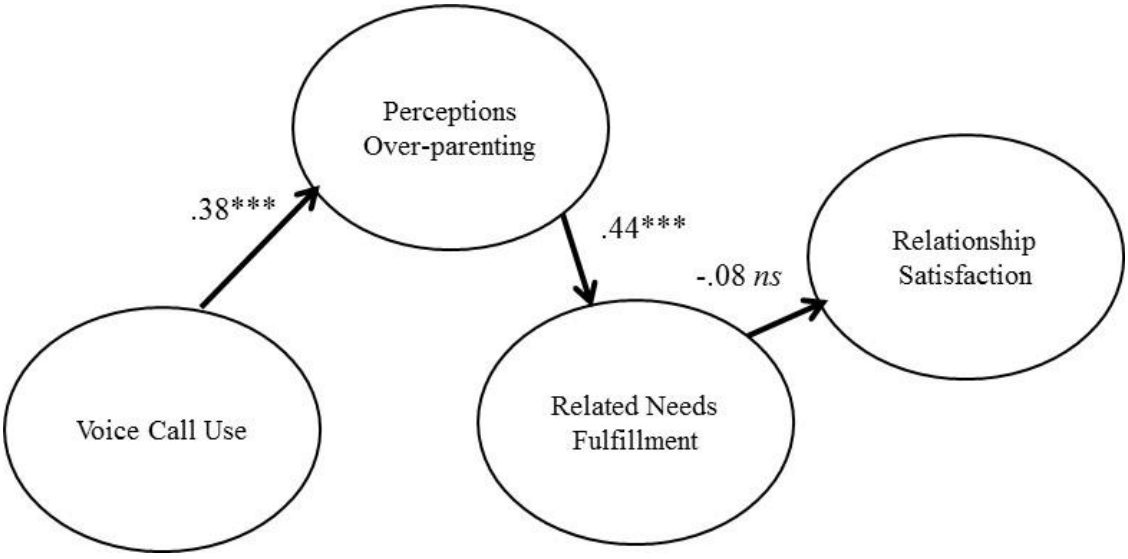

Figure 2. Direct effect results of hypothesized voice calls model.

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. Figure values are standardized regression coefficients.

Table 9
Indirect Effects for Hypothesized Voice Calls Model

	Indirect Effect (95% CI)
VC Use → Overparenting → Relatedness Needs Fulfillment → RSat	-.01(-.06, .03)
VC Use → Overparenting → Relatedness Needs Fulfillment	.17*(.06, .28)
Overparenting → Relatedness Needs Fulfillment → RSat	-.04(-.15 .07)

Note. * Significant indirect effect because lower and upper bounds of 95% confidence interval is entirely above zero. VC Use= Parent-Young Adult Child Voice Calls Use, RSat = Relationship Satisfaction, CI = Confidence Interval.

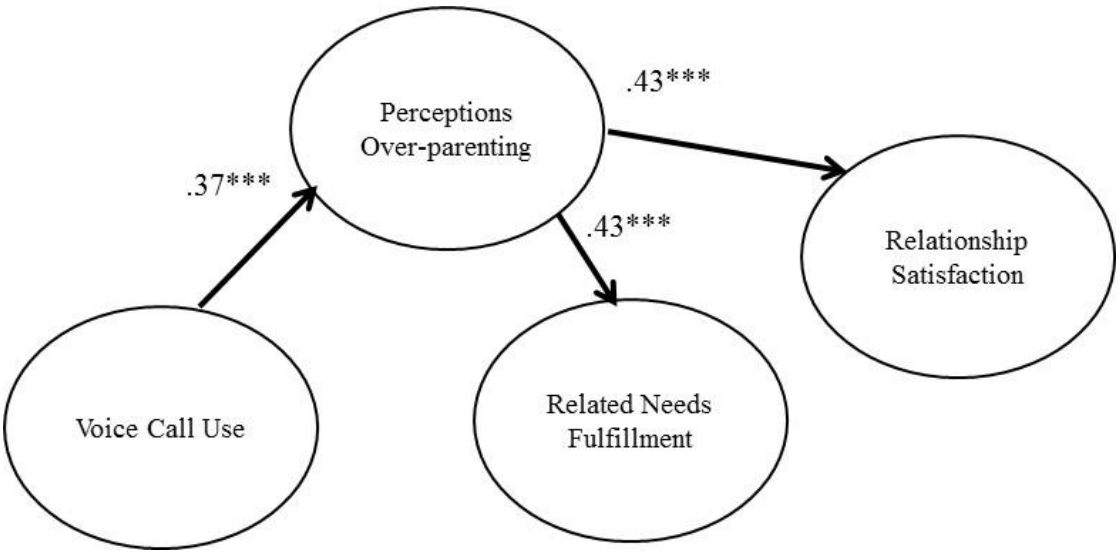

Figure 3. Direct effects for final pruned voice call model.

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. Figure values are standardized regression coefficients.

Table 10
Standardized Indirect Effect Estimates from Final Pruned Voice Calls Model

	Indirect Effect (95% CI)
Voice Call Use → Overparenting→ → RSatisfaction	.16*(.07, .25)

Note. * Significant indirect effect because lower and upper bounds of 95% confidence interval is entirely above zero. RSatisfaction = Relationship Satisfaction, CI = Confidence Interval.

Table 11
Standardized Factor Loadings, Residuals, and R^2 Values for Text Messaging Model

Indicator	Loading(SE)	Theta	R^2
Parent-Young Adult Child Text Messaging Use			
1	.53(.07)	.72	.29
2	.54(.06)	.71	.29
3	.86(.05)	.25	.75
4	.60(.06)	.64	.36
Perceptions of Overparenting			
PS	.32(.10)	.90	.10
AM	.50(.09)	.75	.25
PD	.29(.09)	.92	.08
TA	.62(.09)	.62	.38
RA	.55(.09)	.70	.30
Reported Relatedness Needs Fulfillment			
1	.47(.08)	.78	.22
2	.61(.07)	.63	.37
3	.76(.07)	.43	.57
4	.59(.07)	.65	.35
Reported Relationship Satisfaction			
1	.84(.03)	.30	.70
2	.81(.03)	.42	.58
3	.76(.04)	.34	.66
4	.85(.03)	.28	.72

Note. P = Relational Maintenance Positivity; O = Relational Maintenance Openness; A= Relational Maintenance Assurances; SN = Relational Maintenance Social Network; ST = Relational Maintenance Shared Tasks; PS = Overparenting Anticipatory Problem-Solving; AM = Overparenting Advice and Affect Management, PD = Overparenting Parent Direction, TA = Overparenting Tangible Assistance, RA = Overparenting Risk Aversion.

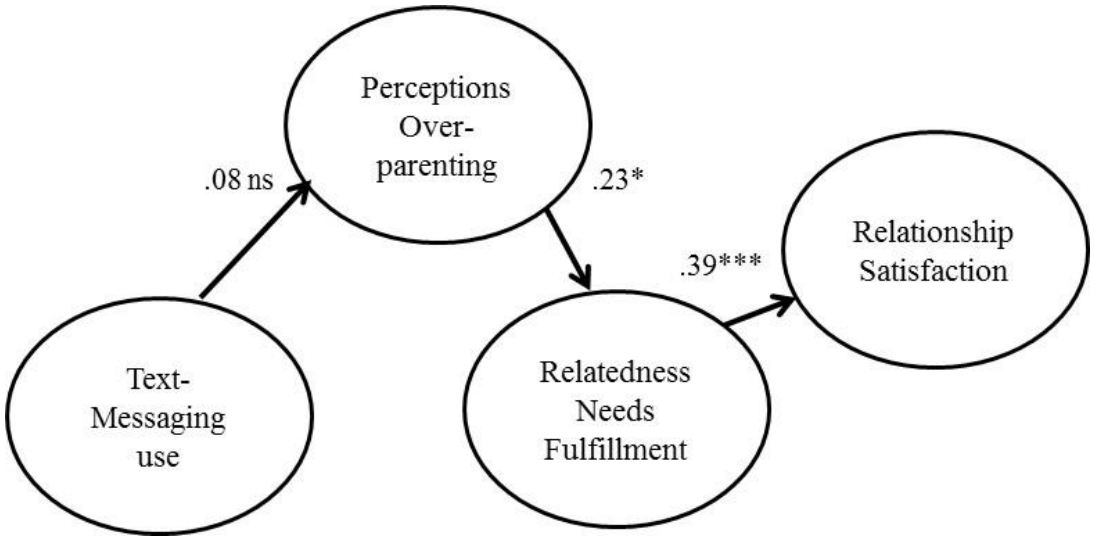

Figure 4. Direct effect results of hypothesized text messaging model.

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. Figure values are standardized regression coefficients.

Table 12
Indirect Effects from Hypothesized Text Messaging Model

	Indirect Effect (95% CI)
TM Use → Overparenting → Relatedness Needs Fulfillment → RSat	.01(-.03, .05)
TM Use → Overparenting → Relatedness Needs Fulfillment	.02(-.07, .11)
Overparenting → Relatedness Needs Fulfillment → RSat	.09(-.06, .24)

Note. * Significant indirect effect because lower and upper bounds of 95% confidence interval is entirely above zero. TM Use= Parent-Young Adult Child Use Text Messaging, RSat = Relationship Satisfaction, CI = Confidence Interval.

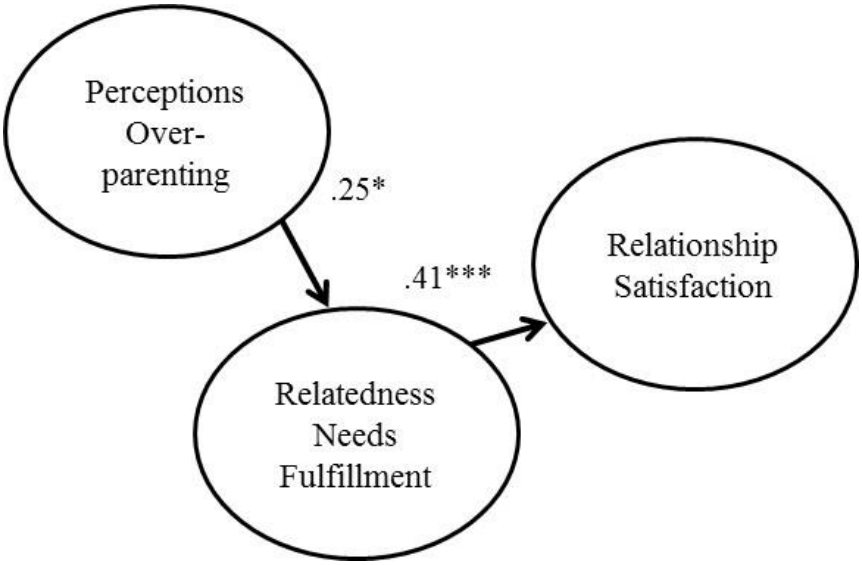

Figure 5. Direct effects for final pruned text messaging model.

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. Figure values are standardized regression coefficients.

Table 13
Standardized Indirect Effect Estimates from Final Pruned Text Messaging Model

	Indirect Effect (95% CI)
Overparenting→ Relatedness Needs Fulfillment → RSatisfaction	.10(-.04, .24)

Note. * Significant indirect effect because lower and upper bounds of 95% confidence interval is entirely above zero. RSatisfaction = Relationship Satisfaction, CI = Confidence Interval.

Table 14
Standardized Factor Loadings, Residuals, and R^2 Values for Public Facebook Use Model

Indicator	Loading(SE)	Theta	R^2
Parent Young Adult Child Public Facebook Use			
1	.37(.13)	.86	.14
2	.82(.21)	.33	.68
3	.47(.14)	.78	.22
Perceptions of Parents' Relational Maintenance			
P	.86(.04)	.26	.75
O	.76(.05)	.42	.58
A	.84(04)	.30	.70
SN	.73(.05)	.47	.53
ST	.65(.06)	.58	.42
Perceptions Overparenting			
PS	.62(.08)	.62	.38
AM	.73(.06)	.46	.54
PD	.67(.07)	.56	.44
TA	.56(.08)	.69	.31
RA	.81(.06)	.35	.65
Reported Relatedness Needs Fulfillment			
1	.70(.06)	.52	.49
2	.60(.07)	.64	.37
3	.83(.05)	.32	.68
4	.70(.06)	.50	.50
Reported Relationship Satisfaction			
1	.92(.02)	.16	.84
2	.93(.02)	.14	.86
3	.88(.03)	.23	.77
4	.83(.03)	.31	.69

Note. P = Relational Maintenance Positivity; O = Relational Maintenance Openness; A= Relational Maintenance Assurances; SN = Relational Maintenance Social Network; ST = Relational Maintenance Shared Tasks; PS = Overparenting Anticipatory Problem-Solving; AM = Overparenting Advice and Affect Management, PD = Overparenting Parent Direction, TA = Overparenting Tangible Assistance, RA = Overparenting Risk Aversion.

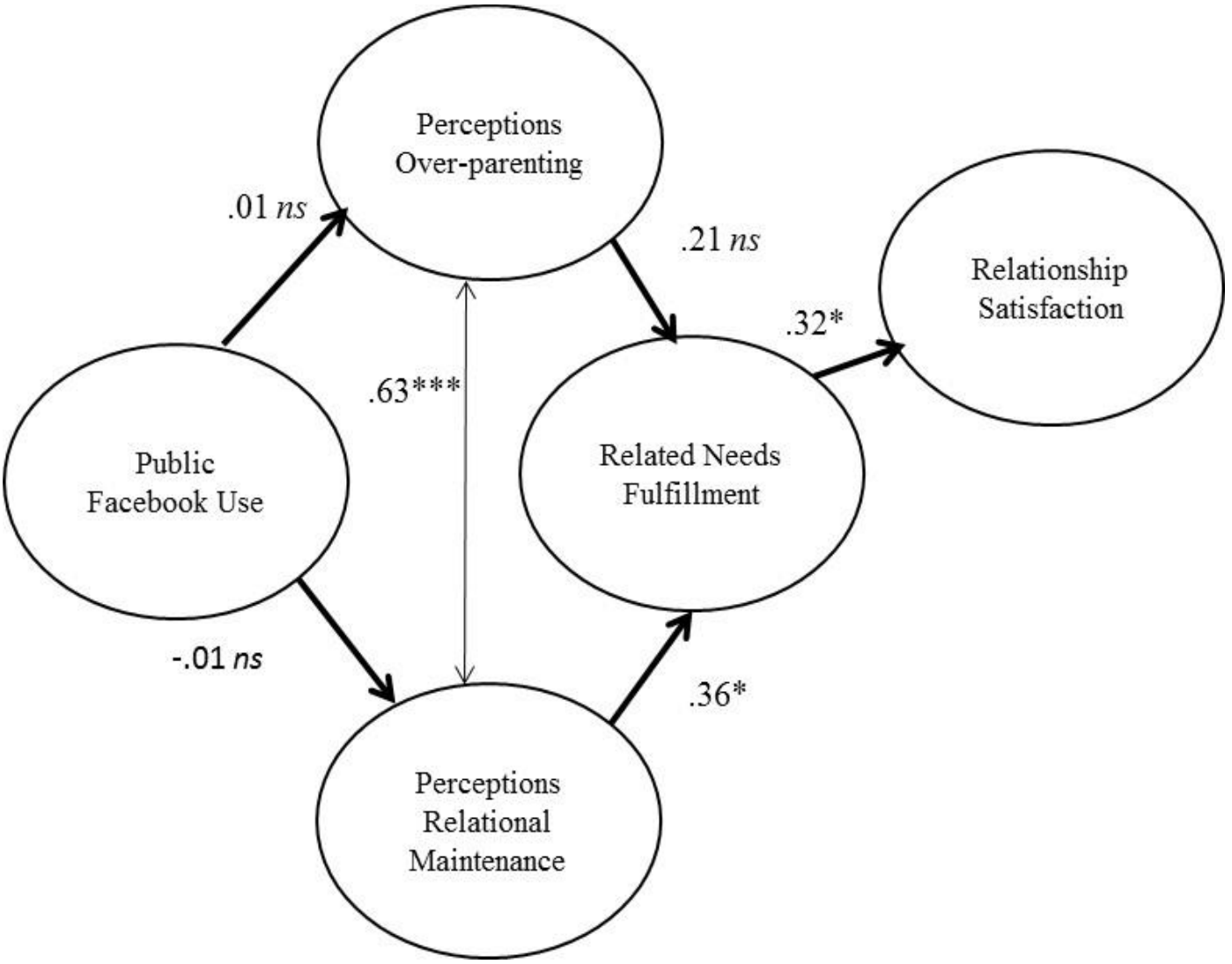

Figure 6. Results of hypothesized public Facebook model.

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. Figure values are standardized regression coefficients.

Table 15
Indirect Effects from Hypothesized Public Facebook Model

	Indirect Effect (95% CI)
PFB Use → Overparenting → Relatedness Needs Fulfillment → RSat	.00(-.06, .06)
PFB Use → Overparenting → Relatedness Needs Fulfillment	.00(-.11, .12)
Overparenting → Relatedness Needs Fulfillment → RSat	.07(-.11, .24)
PFB Use → RMaintenance → Relatedness Needs Fulfillment → RSat	.00(-.07, .07)
PFB Use → RMaintenance → Relatedness Needs Fulfillment	-.00(-.16, .16)
RMaintenance → Relatedness Needs Fulfillment → RSat	.11(-.14, .37)

Note. *Significant indirect effect because lower and upper bounds of 95% confidence interval is entirely above zero. PFB Use= Parent-Young Adult Child Public Facebook Use, RSat = Relationship Satisfaction, RMaintenance = Relationship Maintenance, CI = Confidence Interval.

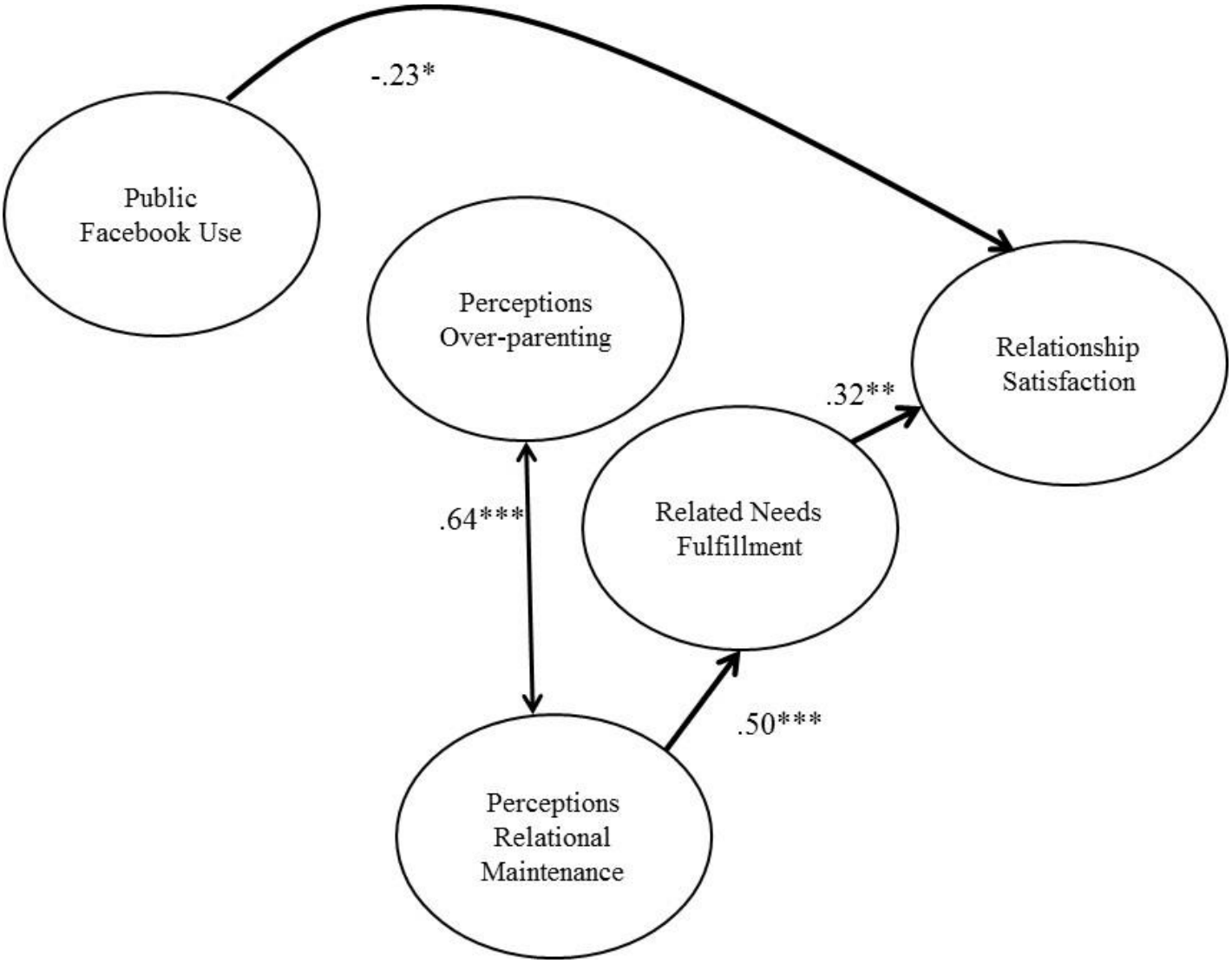

Figure 7. Direct effects for final pruned public Facebook model.

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. Figure values are standardized regression coefficients.

Table 16
Indirect Effects from Hypothesized Public Facebook Model

	Indirect Effect (95% CI)
RMaintenance → Relatedness Needs Fulfillment → RSat	.16(-.06, .38)

Note. * Significant indirect effect because lower and upper bounds of 95% confidence interval is entirely above zero. RMaintenance = Perceptions of Parents' Relational Maintenance, RSat = Relationship Satisfaction, CI = Confidence Interval.

Table 17
Standardized Factor Loadings, Residuals, and R^2 Values for Private Facebook Use Model

Indicator	Loading(SE)	Theta	R^2
Parent-Young Adult Child Private Facebook Use			
1	.63(.09)	.61	.39
2	.95(.10)	.11	.89
3	.51(.09)	.74	.26
Perceptions of Parents' Relational Maintenance			
P	.86(.04)	.26	.75
O	.76(.05)	.42	.58
A	.84(04)	.30	.70
SN	.73(.05)	.47	.53
ST	.65(.06)	.58	.42
Perceptions of Overparenting			
PS	.62(.08)	.62	.38
AM	.73(.06)	.46	.54
PD	.67(.07)	.56	.44
TA	.56(.08)	.69	.31
RA	.81(.06)	.35	.65
Reported Relatedness Needs Fulfillment			
1	.70(.06)	.52	.49
2	.60(.07)	.64	.37
3	.83(.05)	.32	.68
4	.70(.06)	.50	.50
Reported Relationship Satisfaction			
1	.92(.02)	.16	.84
2	.93(.02)	.14	.86
3	.88(.03)	.23	.77
4	.83(.03)	.31	.69

Note. P = Relational Maintenance Positivity; O = Relational Maintenance Openness; A= Relational Maintenance Assurances; SN = Relational Maintenance Social Network; ST = Relational Maintenance Shared Tasks; PS = Overparenting Anticipatory Problem-Solving; AM = Overparenting Advice and Affect Management, PD = Overparenting Parent Direction, TA = Overparenting Tangible Assistance, RA = Overparenting Risk Aversion.

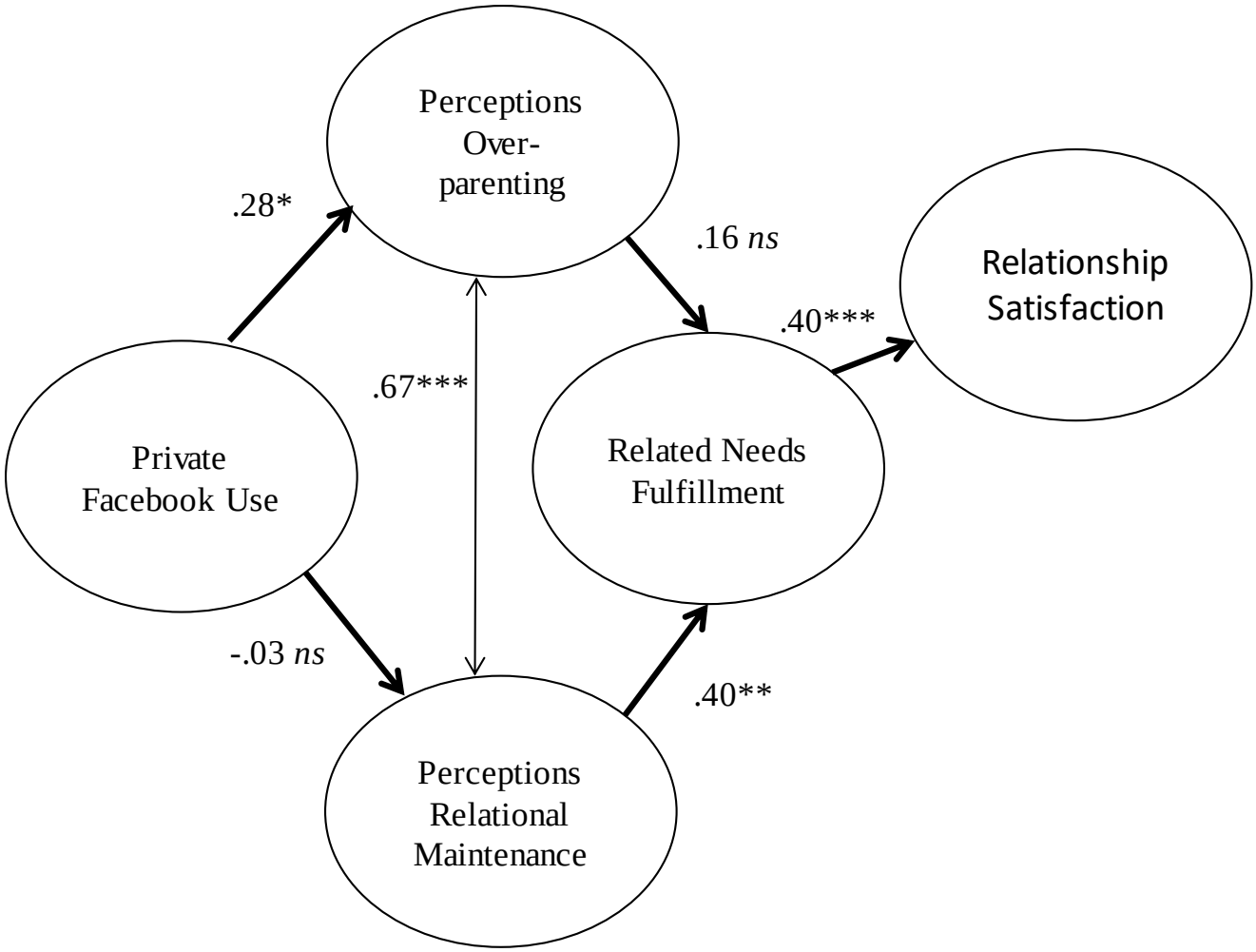

Figure 8. Results of hypothesized private Facebook model.

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. Figure values are standardized regression coefficients.

Table 18
Indirect Effects from Hypothesized Private Facebook Model

	Indirect Effect (95% CI)
PrFB Use → Overparenting → Relatedness Needs Fulfillment → RSat	.02(-.02, .05)
PrFB Use → Overparenting → Relatedness Needs Fulfillment	.04(-.04, .13)
Overparenting → Relatedness Needs Fulfillment → RSat	.06(-.06, .19)
PrFB Use → RMaintenance → Relatedness Needs Fulfillment → RSat	-.01(-.05, .04)
PrFB Use → RMaintenance → Relatedness Needs Fulfillment	-.01(-10, .08)
RMaintenance → Relatedness Needs Fulfillment → RSat	.16(-.06, .38)

Note. * Significant indirect effect because lower and upper bounds of 95% confidence interval is entirely above zero. PrFB Use= Parent-Young Adult Child Private Facebook Use, RSat = Relationship Satisfaction, RMaintenance = Relationship Maintenance, CI = Confidence Interval.

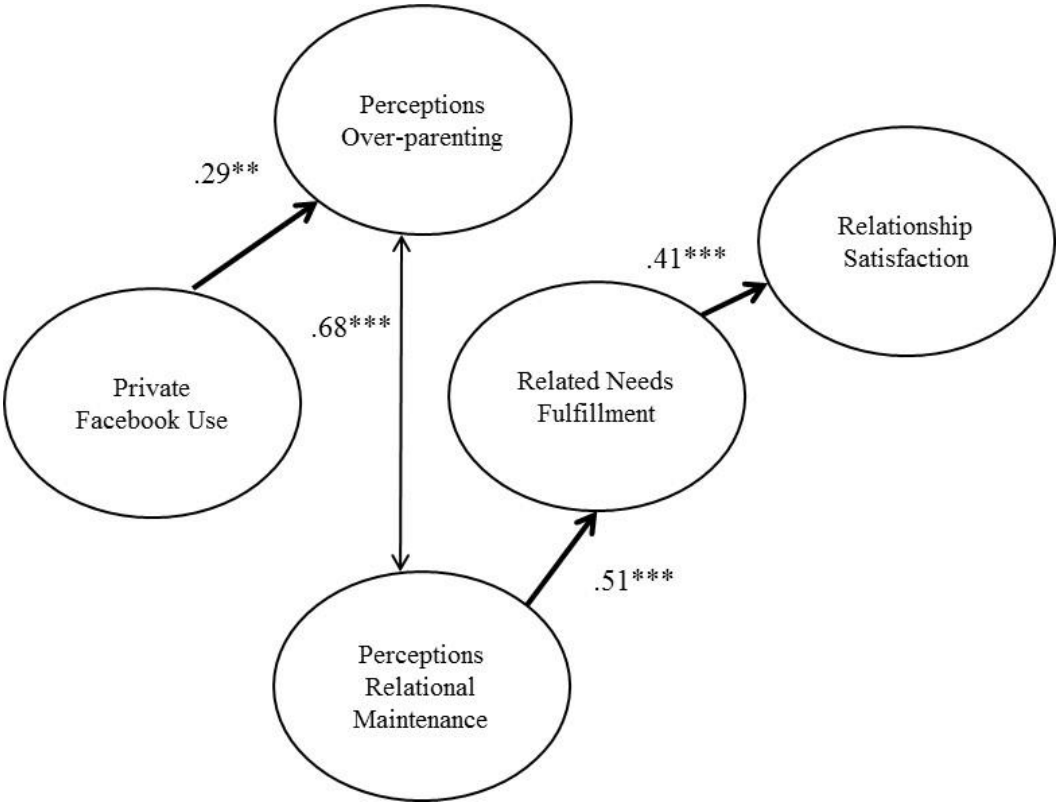

Figure 9. Direct effects for final pruned private Facebook model.

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. Figure values are standardized regression coefficients.

Table 19
Indirect Effects from Final Private Facebook Model

	Indirect Effect (95% CI)
RMaintenance → Relatedness Needs Fulfillment → RSat	.21(-.01, .43)

Note. * Significant indirect effect because lower and upper bounds of 95% confidence interval is entirely above zero. RSat = Relationship Satisfaction, RMaintenance = Relationship Maintenance, CI = Confidence Interval.